Chapter 8

LAY OPINION EVIDENCE

§ 8.01 CHAPTER CHECKLIST

1. Is the testimony sought "lay" or "expert"?
2. If the testimony involves "lay opinion," is the opinion:
   a. "rationally based" on the perception of the witness and
   b. helpful to a clear understanding of the witness' testimony or the determination of a fact in issue?
   c. Does it express a "collective fact" or a "skilled lay observer's" opinion?

§ 8.02 RELEVANT FEDERAL RULES OF EVIDENCE

Rule 701. Opinion Testimony by Lay Witnesses

If the witness is not testifying as an expert, the witness' testimony in the form of opinions or inferences is limited to those opinions or inferences which are (a) rationally based on the perception of the witness and (b) helpful to a clear understanding of the witness' testimony or the determination of a fact in issue and (c) not based on scientific, technical, or other specialized knowledge within the scope of Rule 702.

§ 8.03 DISTINGUISHING BETWEEN LAY AND EXPERT TESTIMONY

[A] The Distinction

Expert testimony can serve many functions, but its distinctive quality is that it often involves opinions. For example, a physician might testify thus: "In my opinion, the plaintiff will never walk again." At least at common law, laypersons were generally prohibited from testifying to opinions. This prohibition flowed in part from an idea similar to that expressed in Rule 602 which, you may recall, bars a witness from testifying to a matter "unless evidence is introduced sufficient to support a finding that the witness has personal knowledge of the matter." "Personal knowledge" means that the witness obtained the information by using one of his or her senses: hearing, seeing, smelling, tasting, or feeling the object or event. Inferences or conclusions, a category that includes opinion, are, however, derived by the human power of reason rather than by observation. The role of witnesses is ordinarily to convey their observations, the jury's job to draw appropriate inferences therefrom.

Example

The following is a section of testimony in a rape case:

PROSECUTOR: What did you observe that night?

A: I saw George looking at Martha with lust in his eyes.

DEFENSE COUNSEL: Objection, improper lay opinion. The witness can know and recount only what he saw, heard, etc. He can't read minds, and he shouldn't be allowed to speculate on what my client was thinking or feeling that night.

JUDGE: Sustained.

The witness, let us say a neighbor, may have seen George using obscene gestures or heard George expressing sexual desire for Martha. Such observations might support the inference that George felt lust. But this section of questioning reveals no foundation showing an adequate basis of personal knowledge. Recounting the observations was seen, at least at common law, as the witness' role; drawing the inferences from those observations was the jury's role.

In the case of experts, however, common-law courts were less concerned about the witness' personal knowledge and about the proper division of responsibilities between witness and jury. The common law saw experts as having the ability to engage in the analysis of underlying data necessary to rendering opinions. The Federal Rules of Evidence retain the lay/expert distinction, but are more skeptical about drawing a sharp line between "fact" and "opinion." The rules also exhibit less concern than the common law about the division of labor between witness and fact finder. However, the approach of the Federal Rules to lay opinions has not radically changed modern practice. Thus examination of common-law practice is still helpful. Nevertheless, the Rules are more receptive to lay opinion than was earlier law.

Before the Federal Rules approach is examined here in detail, however, it is still helpful to further clarify the meaning of the "personal knowledge" requirement of Rule 602 as an aspect of "conditional relevancy."

[B] Connection to Conditional Relevance

The Rule 602 requirement that evidence be "sufficient to support a finding" of personal knowledge is, according to that Rule's Advisory Committee Note, "in fact a specialized application of the provision of Rule 104(b) on conditional relevancy." Lay testimony is not considered relevant within the meaning of Rule 401, and is thus inadmissible under Rule 402, unless the proponent first offers a foundation showing of sufficient evidence for a reasonable jury to find by a preponderance of the evidence that the witness had personal knowledge of the events he or she relates. The *Huddleston* case, which is discussed in Chapter 5, imposes this preponderance standard of proof on all Rule 104(b) conditional relevancy questions.

Example

Q: (the first question posed to this witness) What happened at 2 p.m. on June 26, 2000, at Maple and Pine, Philadelphia, PA?

OPPOSING COUNSEL: Objection, no foundation as to personal knowledge under Rule 602.

At this point, we do not even know whether the witness was at the intersection of Maple and Pine at 2 p.m. Consequently, we certainly don't know whether he was close enough to the relevant events (for example, an automobile accident) to see them. Perhaps he only heard about the accident from a friend, or perhaps he read about it in a newspaper or perhaps he was actually at the scene but did not arrive until after the accident, seeing only the wreckage. If he heard or read about the accident, he has personal knowledge only of what others said (which would raise hearsay problems); he has no personal knowledge of the accident itself. The witness' testimony is not admissible unless and until the proponent offers sufficient evidence of personal knowledge.

[C] When Laypersons Can Offer Opinions

[1] Rationally Based on Perceptions of Witness

Nevertheless, even laypersons are sometimes permitted to offer opinions. Rule 701 thus declares that a witness "not testifying as an expert" (i.e., a layperson) may testify "in the form of opinions or inferences" if, and only if, they are limited to "those opinions or inferences which are (a) rationally based on the perception of the witness and (b) helpful to a clear understanding of the witness' testimony or the determination of a fact in issue."

This rule is generally understood as expressing a preference for more specific over more general description. It vests substantial discretion in the trial judge. Thus, lay opinions may be challenged as "unhelpful" when they are too general to be of use to the jury. Lay opinions may also be excluded when they are superfluous, because the inferences to be drawn are obvious from the witness' detailed testimony about the underlying perceptions. Thus, in the rape case example opening this chapter, it might be argued that a specific description of what George said about Martha or what he did in her presence is more helpful than the conclusory opinion that he "lusted" after her. But once his words and actions are concretely described, his lust or its absence should be clear, and there is no need for an opinion on that question.

The Advisory Committee Note to subdivision (a) of Rule 701 says that it merely expresses the "familiar requirement of first-hand knowledge or observation." That is, the opinion must be based on first-hand, personal knowledge, though the opinion itself is by definition an inference that goes beyond such knowledge. The word "rationally," however, can be interpreted as requiring the judge to decide whether the witness' first-hand knowledge is adequate to support the opinion.

Example

A witness has testified that he was 200 feet away from the scene of an auto accident, facing in the opposite direction. He heard squealing brakes and a loud crash. From these observations alone, he testifies that the defendant's car was traveling at 65 mph on a residential street when it entered the intersection. Absent any special training, the witness cannot so precisely determine the defendant car's speed merely from the sound of the crash, especially when the witness was then 200 feet away.

[2] Collective Facts

Subsection (b) of Rule 701 merely states a general rule that the lay opinion must be helpful to the factfinder. The trial judge must give that rule meaning in specific cases and has substantial discretion in making this judgment. The idea of helpfulness includes situations in which "you had to be there," that is, cases in which this witness' recounting of details alone cannot fully capture the reality of what happened. Only an opinion can help to convey the scene effectively. Opinions may also be helpful because they aid clear expression. Thus a witness' opinion that the defendant was "smiling" more clearly conveys what the witness saw than does the statement, "The left corner of his mouth upturned one-eighth of an inch." These sorts of concerns underlay the "collective facts doctrine." This doctrine arose at common law and is now used under the Federal Rules as one way to help guide the judge's discretion.

A "collective fact" is really a shorthand rendition of what the witness perceived. The event observed may involve so many details that what registers in the witness' mind is an overall impression more than specifics. That impression must be the sort of inference that laypersons commonly and reasonably draw. If expert testimony is instead needed to support the inference, the layperson may not draw it.

Example 1

PROSECUTOR: What, if anything, did you observe about the defendant's demeanor that night?

A: He was very drunk.

Many, probably most, judges would permit this answer as a collective fact. Laypersons describe others as drunk in ordinary life all the time, and we generally know and trust what they mean. However, some judges will push the lawyer to probe first whether the witness can instead describe the specific observations underlying the inference of drunkenness — that the defendant's breath smelled of alcohol, his eyes were red, his gait wobbly, etc. — on the theory that there is then no need for the opinion. If so, the witness can convey enough details and forbear from giving overall impressions. Other judges will insist that, without the details, there is no way for a jury to judge the accuracy of the witness' inference. They will, therefore, exclude the opinion if the witness cannot recount the details. Another group of judges favor, where possible, admitting both the details and the opinion on the theory that both are necessary to conveying an overall accurate impression. Similar disagreements and case-specific judgments will be found in all applications of the

collective facts concept. In any event, the witness must, of course, have sufficient knowledge of supporting details to meet the requirement that the opinion be "rationally based on the perception of the witness." A fleeting glimpse of a person is not sufficient to support the opinion, "He was drunk."

Example 2

PROSECUTOR: From the odor you smelled on the defendant's breath, could you tell how many beers he had consumed that night?

DEFENSE COUNSEL: Objection; perhaps a specially trained expert can draw such a conclusion, but this witness cannot do so.

JUDGE: Sustained

[3] Skilled Lay Observers

Another useful concept, suggested by Professor Edward J. Imwinkelried, is that of the "skilled lay observer." The admissibility of a skilled lay observer's testimony turns not on whether most laypersons commonly could reasonably draw the inference. Rather, the question is whether this layperson has prior experience that enables laypersons with such experience reasonably to draw the proffered conclusion.

Example

John has seen George sign his name on checks on many hundreds of occasions. John may be qualified to testify that the signature on a particular check is George's, even though John did not personally see George sign that check. But a similar witness who had never seen George sign a check, or who had seen him do so only once, would not be able to opine that this particular signature was George's.

Skilled lay observer opinion lies in the borderland between lay and expert testimony, and courts may sometimes have to draw a fine line. But that line must be drawn, because an expert opinion must jump through more admissibility hoops than a lay opinion. Some counsel try to avoid those hoops by "the simple expedient of proffering an expert in lay witness clothing" (Rule 701 amendment, Advisory Committee Note). To obviate this "end run" around the expert witness rules, Rule 701 was amended by the addition of subsection (c). Subsection (c) provides that lay opinion testimony may not be "based on scientific, technical, or other specialized knowledge within the scope of Rule 702." The point of this amendment is to ensure that the admissibility of expert testimony is determined under the expert evidence rules — especially Rule 702 (which governs "scientific, technical, or other specialized knowledge") — and not the less stringent rules governing lay opinion.

Not all commentators embrace Professor Imwinkelried's "skilled lay observer" terminology (and the term does not itself appear in Rule 701). Nevertheless, it is clear that some lay opinion is permitted when the lay witness has experience or information not common to all laypersons but falling short of

Jonathon Wilk (Orson Welles) questions Ruth Evans (Diane Varsi) about the sanity of two murder defendants in *Compulsion*. *

the "specialized knowledge" required of experts. Drawing the sometimes fine line between an informed layperson and a true "expert" is ultimately a policy question, even if this point is not always clearly made by the courts. If there is substantial reason to worry that an opinion may not be trustworthy, and if its flaws may not be readily recognizable by a jury, it may make sense to subject that testimony to the heightened scrutiny of the expert evidence rules.

[4] Some Caveats

A few caveats are in order. First, many common-law courts permitted lay opinion only when "necessary" to an understanding of the witness' testimony. The Rule 701 "helpfulness" test is more flexible and discretionary than the "necessity" concept.

Second, "fact" and "opinion" are not always clearly divisible; sometimes the distinction is a matter of degree. Ordinary folks speak all the time with less than absolute certainty, but neither in everyday life nor in the courtroom does that hesitation render their testimony opinion. For a witness to say, "I think the car was red," is to testify from personal knowledge rather than to offer an opinion.

Third, the common law flatly banned opinions on "ultimate issues," such as whether the crane operator was negligent or whether the killer acted in the heat of passion. Rule 704(a) abolishes this prohibition for both lay and

expert testimony, except for a subcategory of expert opinion to be discussed in the next chapter. However, ultimate issue opinions may still be excluded if unhelpful under Rule 701 (lay opinions) or of no assistance to the factfinder under Rule 702 (expert opinions), or if prejudice and related concerns substantially outweigh their probative value under Rule 403.

Fourth, as our discussion above of the recent amendment to Rule 701 noted, the lay/expert opinion distinction has important consequences. To be more precise, the proper distinction is between lay and expert testimony, not between "laypersons" and "experts." The same witness might offer both lay observations based on personal knowledge and expert opinions. Thus if a doctor explains that her patient's nose bled profusely, his eyelids were swollen, and he coughed repeatedly, the doctor is simply conveying observations based on her personal knowledge. Those observations could have been made by any layperson. But if the doctor says, "The patient had the flu," that is an expert opinion, not a lay opinion or a personal observation.

Some expert "observations," however, fuse personal knowledge and opinion. A doctor who describes a bone fracture based upon touch or diagnoses a bruise that is several days old by its appearance is applying expert knowledge to first-hand observation. The greater the extent to which an "observation" in fact involves an inference, the more likely that the observation will be labeled an opinion. Moreover, the greater the degree of specialized knowledge, skill, or experience required to have some confidence in an opinion, the more likely that the opinion will be viewed as an "expert" one. Whether someone offers a lay or an expert opinion is thus to some extent a case-by-case judgment. That judgment should be guided by the policy concerns underlying the expert evidence rules, to which we will turn in more detail in the next chapter. For now, it is useful simply to remember that courts often worry that juries will be confused by expert testimony, or that jurors will defer to the expert's authority without critically examining the bases of his or her opinions, or that they will be so in awe of the expert as to give the opinions more weight the they deserve. For these reasons, special evidence rules make it harder to admit expert opinions than lay opinions.

§ 8.04 PROBLEMS

Problem 8-1: High on Marijuana

Two automobiles collided at the corner of Third and Elm Streets, seriously injuring one of the drivers, Ronald Patterson. Patterson has sued the other driver, Gerald Rabinowitz, alleging that he caused the accident by negligently running a red light. Patterson's passenger, Jose Ramirez, testifies at trial that, immediately after the accident, Ramirez and Rabinowitz both left their cars and chatted. You are Patterson's attorney and want to call Ramirez to the stand to testify that Rabinowitz was obviously very high on marijuana at the time of the accident. You know from pretrial discovery that Rabinowitz' defense will be that the light facing him was in fact green, and it was Patterson who ran the red light.

1. What is your theory of the relevance of Ramirez's testimony?

2. Is any portion of his testimony opinion, or does it all involve personal observation?

3. If any portion is opinion:

a. Is it lay or expert?

b. What questions would you ask to establish the foundation for admissibility of the opinion? Why?

c. What cross-examination questions on voir dire do you anticipate from opposing counsel? Why?

Problem 8-2: More My Cousin Vinnie and Tire Marks

Vinnie Barbarino is a recent law school graduate. His cousin, Johnny Barbarino, allegedly shot and killed the cashier at a 7–11 during the course of a robbery. An eyewitness has testified that he saw Johnny and his cohort, Merv Griffin, fleeing from the robbery in a 1967 green Camaro. Johnny was in fact stopped driving such a car ten minutes after the killing. At that time he admitted to the police that he had purchased something at the 7–11 ten to fifteen minutes before being stopped. The police examination at the 7–11 shows tire tracks leaving the scene. The prosecution expert has testified that these tracks were consistent with those that would be left by the sorts of tires that can be used on 1967 Camaros. Vinnie calls to the stand his girlfriend, Fran Chabowski, to offer the opinion that the tire impressions in the police photographs at the 7–11 could not have been made by a 1967 Camaro, both because the impressions left were more like those of a heavier car and because the tire marks had unusual curlicues found only on tires used exclusively on 1967 Buick Le Sabres. Vinnie seeks as follows to qualify Ms. Chabowski to offer this opinion:

DEFENSE COUNSEL: Ms. Chabowski, what do you do for a living?

A: I am a hairdresser.

DEFENSE COUNSEL: And what do your father and brother do for a living?

PROSECUTOR: Objection, Your Honor. Irrelevant.

DEFENSE COUNSEL: Your Honor, the relevance will soon be clear.

JUDGE: It had better be, Mr. Barbarino. Proceed.

DEFENSE COUNSEL: So what do your father and brother do for a living?

A: They run their own car repair business.

DEFENSE COUNSEL: Have you ever been involved in that business?

A: Yes, I worked there for twelve years.

DEFENSE COUNSEL: I am handing you a photograph marked P-1. Could those tire marks in the photo have been made by a 1967 Camaro?

PROSECUTOR: Objection, inadequate foundation.

JUDGE: Objection sustained.

1. Was the opinion that Vinnie sought to elicit "lay" or "expert"? Would your answer change if Ms. Chahowski had never worked for an auto repair shop

but instead was simply a car buff, who read extensively on auto design and repair and spent all her free time for the past decade repairing and restoring classic cars, including 1967 Camaros and LeSabres?

2. Was the prosecution's objection precise enough? How could you have more precisely and convincingly stated that objection?

3. What questions should Vinnie have asked to improve the chances that the foundation laid would be found adequate to justify admitting the opinion? Why?

4. If, instead of sustaining the objection, the trial judge first permitted cross-examination by the prosecutor on voir dire, what questions should the prosecution ask? Why?

5. Should the questions in 3 and 4 above be asked within, or outside of, the jury's hearing? Why?

Problem 8-3: The Stolen Ring

Drew Gavel is charged with felony theft of a diamond ring from a jeweler. For the offense to be a felony, rather than a mere misdemeanor, the fair market value of the ring must be over $5,000. Officer John Kelly is called to the stand by the prosecution to testify that the ring stolen by Gavel has a fair market value of at least $7,000. The bases for Officer Kelly's opinion are that: (1) he had recently comparison-shopped at over 20 jewelry stores for an engagement ring for his fiancee; (2) he had also for the last three months read extensively on the quality and pricing of diamond rings, relying largely on internet searches for information; and (3) he had purchased, during the very week of the theft, an engagement ring identical to the one stolen by Gavel for $7,000 — which was the cheapest price he could find anywhere for that kind of ring. The defense objects.

1. What ruling and why?

2. Would another sort of witness have been a better choice? Who? Why?

3. What if the fair market value of a single-family home had instead been at issue? Of recently-released Rolling Stones CDs? Of grocery store items? Which, if any, of these items are suitable for lay opinion testimony? Expert opinion? Who would you call to the stand? What foundation would you lay?

Problem 8-4: The Wound

Dr. Richard Speck has been sued for negligently treating Arnold Paslitz's ankle wound, by prescribing only an antiseptic and a band aid. The wound turned out to be the bite of a poisonous brown recluse spider. It developed an infection common in such bites but left so long untreated that permanent physical damage was done to the ankle. Paslitz maintains that he delayed seeking treatment solely because of Speck's advice that there was nothing to worry about that a band-aid and a little Bactine couldn't cure. Paslitz calls his wife, Patricia, to testify about her observations of the wound that ultimately led her to urge her husband to go to the emergency room. She is a securities lawyer with no medical training. The following exchange took place at trial as she was being questioned by Paslitz's counsel:

PLAINTIFF'S ATTORNEY: Please describe the wound, as you observed it on that day.

A: Its appearance was very unusual. There was a round 2-inch hole on Arnold's ankle. Green pus oozed out of the hole. A half-inch ring of what looked like charred-black flesh surrounded the hole. A bright red, swollen, tender-looking circle, about 2 inches in thickness and elevated, like a little volcano, surrounded the charred-looking area. Every part of the wound was sensitive to touch, causing great pain. The wound was hot to the touch, as was Arnold's whole ankle and foot. The foot was itself a bright red, hugely swollen, and sensitive to touch.

DEFENDANT'S ATTORNEY: Objection. Move to strike.

[In a real trial, the objection likely would have preceded the answer, at which point Paslitz's counsel may have made an offer of proof outside the jury's hearing (perhaps at side-bar), to aid the trial judge in her ruling.]

1. What ruling? Why?

2. Are some parts of the answer more objectionable than others? Which portions of the answer should be deleted to increase the likelihood of the testimony's being admitted without sacrificing too much tactical gain for Paslitz? How should the witness be prepared to articulate her answer most effectively given the requirements of the rules of evidence? To deal with objections that are sustained?

3. What if the witness' answer had simply been, "The wound was the grossest I've ever seen — sore, swollen, oozing pus, green, and ugly. Arnold was in pain and scared." *Does any or all of this answer in any way alter your analysis? What portions, if any, of this answer are opinion? Could the witness be prepared to answer in a way that seems more like a recitation of fact than opinion?*

Problem 8-5: The Insanity Defense

Wolin Yerguson boarded a Long Island Railroad rush hour train and pulled out a gun, screaming, "You evil haters must die and save us all!" He then indiscriminately shot 20 passengers, one by one, killing 5 of them and seriously wounding the rest. He mumbled throughout this episode; the other passengers were able to make out only a word or phrase here and there. His bloodshot eyes kept whirling in circles, never making contact with his victim's eyes. As he fired his last bullet, he screamed, "This will appease the dragon."

1. One of the passengers was asked by Yerguson's lawyer on cross-examination at trial, "Did he appear sane during this incident?" The prosecution objects. What ruling? Why?

2. Would your answer change if Yerguson's brother, with whom Yerguson is quite close, were asked that same question about his observations of Yerguson at the police station one-half hour after the crime? The two brothers had spent an hour together at the police station before Yerguson was questioned by the police. Why?

Problem 8-6: The Plane Crash

A small plane crashed onto a busy highway, injuring the passengers of the plane and the occupants of two cars. Anna was an eyewitness. At trial, Anna testified on direct examination.

PLAINTIFF'S ATTORNEY: Anna, in your opinion, how fast was the car traveling when it was hit by the plane?

DEFENDANT'S ATTORNEY: Objection.

JUDGE: (*How should the judge rule? Why?*)

The examination continues:

PLAINTIFF'S ATTORNEY: Anna, how fast was the plane traveling just before it collided with the car?

DEFENDANT'S ATTORNEY: Objection.

JUDGE: (*How should the judge rule? Why?*)

The examination switches gears:

PLAINTIFF'S ATTORNEY: After the plane touched down, you testified that the pilot wobbled out of the craft. Can you describe the pilot?

A: (1) First, I saw him stumble.

A: (2) It smelled like he had been drinking some sort of alcohol.

A: (3) I'd estimate he was about 6 feet, 2 inches tall, and 195 pounds.

A: (4) He looked like he'd been without sleep for a while/ he appeared disoriented.

A: (5) By the way he carried himself, it also appeared as if he had a very large ego; I can usually tell these things right off the bat.

Which of the above five statements, if any, are proper lay opinions? Explain your conclusions.

Problem 8-7: The Wink

Detective Kim Gorel was testifying in a homicide trial about her interview with the defendant, Ken. The defense had claimed mistaken identity in its opening statement.

PROSECUTOR: What happened when you were talking with the defendant?

A: The defendant said, "It's a shame that a person was killed," and then he winked at me.

DEFENSE COUNSEL: Objection! Improper opinion.

JUDGE: (*How should the judge rule? Why?*?

The questioning continues

PROSECUTOR: What do you mean by, "he winked"?

A: He raised his left eyebrow and then quickly closed and opened that same eye.

PROSECUTOR: What did you take that to mean?

DEFENSE COUNSEL: Objection. Calls for speculation.

JUDGE: (*How should the judge rule? Why?*

The prosecution calls a second witness, Al, to testify. It had already been established that a bottle of Kouros cologne was found in the knapsack the defendant was carrying at the time he was arrested.

PROSECUTOR: What did you observe at 9:40 PM in the alley adjacent to John's street?

A: I saw a man raise up a knife and stab another person. Then he ran quickly by me.

PROSECUTOR: What did you observe when he ran by you?

A: Actually, I was so startled and the shadows were so thick, I did not see his face. But I can tell you this, the guy was wearing Kouros cologne.

DEFENSE COUNSEL: Objection! Improper opinion.

How would you rule on this objection if you were the judge and why? How could the prosecutor have done a better job?

Chapter 9

EXPERT OPINION EVIDENCE

§ 9.01 CHAPTER CHECKLIST

1. What are the major and minor premises of the "expert syllogism"?
2. To what relevant issues does any proffered expert testimony relate?
3. If the opinion testimony is "expert," is the expert "qualified" by knowledge, skill, experience, training, or education to testify in the form of an opinion or otherwise?
4. If the expert is so qualified, does the expert's testimony involve: (a) scientific knowledge; (b) technical knowledge; or (c) other specialized knowledge? Does this matter?
5. Is the expert basing an opinion on:
   a. a hypothetical question?
   b. observations personally made by the expert in the courtroom?
   c. observations personally made by the expert outside of the courtroom?
   d. information provided to the expert prior to trial?
6. Does the expert offer his or her opinion to a "reasonable degree of professional certainty?" Does this matter?
7. What is the likely impact of the expert's opinion on the jury? For example, will the testimony "overawe" the jury or otherwise lead it to be unfairly prejudiced, misled, or likely to give the testimony undue weight?
8. Has the expert testified to an "ultimate issue" by stating an opinion or inference as to whether a criminal defendant did or did not have a mental state or condition constituting an element of a charged crime or defense?
9. As to the major premises of the expert syllogism, have the principles and methods (techniques) used by the expert been shown to be both relevant and "reliable," with reliability shown by weighing a wide range of pertinent factors, including:
   a. Whether the principles and techniques are testable and have been tested (that is, has a hypothesis been generated, and have adequate efforts been made to falsify that hypothesis, with no such falsification yet having been achieved)?
   b. Have the theory and technique been subjected to:
      (1) peer review?
      (2) publication?

c. What is the technique's known or potential error rate?

d. Has the principle or technique attained "widespread acceptance"?

e. Are there standards controlling the technique's operation?

10. As to the minor premises of the expert-syllogism:

a. Has the witness reliably applied the general principles and methods to the facts of the specific case?

b. If the expert has based any portion of an opinion on otherwise inadmissible facts or data, are those facts or data of the type "reasonably relied upon" by other experts in the field?

11. Has cross-examination of the expert inquired into such matters as:

a. The non-existence of any particular basis on which the expert relied that might, if shown, alter the opinion?

b. The existence of contrary or additional bases that would alter the expert's opinion?

c. The materials the expert reviewed or failed to review?

d. The tests or other investigations the expert conducted or failed to conduct?

e. Any financial compensation the witness received for giving advice and testimony?

f. The contradiction between his assertions and those by others in "learned treatises"? exception to the hearsay rule?

§ 9.02 RELEVANT FEDERAL RULES OF EVIDENCE

Rule 702. Testimony by Experts

If scientific, technical or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise, if (1) the testimony is based upon sufficient facts or data, (2) the testimony is the product of reliable principles and methods, and (3) the witness has applied the principles and methods reliably to the facts of the case.

Rule 703. Bases of Opinion Testimony by Experts

The facts or data in the particular case upon which an expert bases an opinion may be those perceived by or made known to the expert at or before the hearing. If of a type reasonably relied upon by experts in the particular field in forming opinions or inferences upon the subject, the facts or data need not be admissible in evidence in order for the opinion or inference to admitted. Facts or data that are

otherwise inadmissible shall not be disclosed to the jury by the proponent of the opinion or inference unless the court determines that their probative value in assisting the jury to evaluate the expert's opinion substantially outweighs their prejudicial effect.

Rule 704. Opinion on Ultimate Issue

(a) Except as provided in subdivision (b), testimony in the form of an opinion or inference otherwise admissible is not objectionable because it embraced an ultimate issue to be decided by the trier of fact.

(b) No expert witness testifying with respect to the mental state or condition of a defendant in a criminal case may state an opinion or inference as to whether the defendant did or did not have the mental state or condition constituting an element of the crime charged or of a defense thereto. Such ultimate issues are matters for the trier of fact alone.

Rule 705. Disclosure of Facts or Data Underlying Expert Opinion

The expert may testify in terms of opinion or inference and give reasons therefor without first testifying to the underlying facts or data, unless the court requires otherwise. The expert may in any event be required to disclose the underlying facts or data on cross-examination.

§ 9.03 NATURE OF EXPERT TESTIMONY

[A] Why Experts Are Needed

Experts play an increasingly important role in both civil and criminal trials. In a medical malpractice case, for example, a professor specializing in heart surgery might testify that a defendant doctor botched a surgical procedure. In a civil antitrust case, an expert might opine that Microsoft has attained overwhelming domination of the market for computer operating systems. In a criminal case, an expert might discuss his view that O.J. Simpson's blood and the crime scene blood of his ex-wife's murderer show matching DNA. In each instance, a party maintains that a full, fair, and informed jury decision requires expert guidance. Without such guidance, the proponents of the expert testimony argue, the jury cannot understand why the surgeon fell short, Microsoft rules, and O.J. murdered.

Inferences necessary to courtroom arguments are based on generalizations. For example, a prosecutor argues in a homicide trial that a married woman's male lover killed the woman's husband in a jealous rage. This argument is based on the generalizations that: (1) men in love with married women are jealous of the women's husbands; and (2) jealous men are more likely than other men to kill the person who inspires the jealousy. Generalizations like these are within factfinders' common experience, so no supporting expert testimony is needed. But some generalizations are beyond everyday experience.

Thus the generalization "Women suffering from battered women's syndrome may see danger in their husband or lover's behavior that is not apparent to most other observers" is not one that can be drawn from common events. The expert provides the experience that the lay factfinders lack.

We have, however, up until now spoken in each case of *an* expert but, in fact, many experts are sometimes needed to make a fairly specific point, as will shortly become clear. Furthermore, in addition to offering opinions, an expert may testify to the expert's own observations that underlie the opinions. For example, a psychiatrist might testify that the defendant emitted a wolf-like howl, or a physical therapist might testify about seeing the injured plaintiff's pained grimace. Similarly, experts might recount observations that they made in court, such as a linguist noting aspects of a defendant's speech while the defendant was testifying at trial, then matching that speech to an obscene phone caller's tape-recorded voice.

[B] The Syllogistic Nature of Expert Reasoning

To understand who may qualify as an expert, how they may testify, and what they might say, it is helpful to examine the syllogistic nature of expert testimony. *See* Edward J. Imwinkelried, *The Educational Significance of the Syllogistic Structure of Expert Testimony*, 87 N.W.U. L. Rev. 1148 (1993). A syllogism is a form of argument consisting of a major premise (a general statement), a minor premise (a more specific statement), and a conclusion that must necessarily be true if the premises are true. For example:

Major Premise:	All dogs have teeth.
Minor Premise:	Lassie is a dog.
Conclusion:	Therefore, Lassie has teeth.

The major premise in this example involves a broad generalization: that all dogs have teeth. The minor premise involves an observation about one particular creature, Lassie, namely, that Lassie is a dog. If both premises are true, that is, if all dogs do indeed have teeth and if Lassie is a dog, then Lassie necessarily must have teeth. But we might easily disprove the major premise, perhaps by observing at least one dog who has no teeth — an observation easy to make in a kennel of geriatric canines! If all we can then say is that some dogs have teeth, then it does not necessarily follow that Lassie, a dog, has teeth (though it may nevertheless turn out that she does). Similarly, even if it were correct that all dogs have teeth, the minor premise might be proven false: Lassie might be a wolf instead of a dog. That assertion may itself require a separate expert opinion distinguishing between dogs and wolves.

Expert testimony can he analyzed in a similar fashion.

Example

In the infamous criminal trial of O.J. Simpson for murdering his ex-wife, Nicole Brown Simpson, and her friend, Ronald Goldman, the prosecution argued that blood found at the crime scene was O.J.'s blood, thus making it highly likely that he was the killer. DNA testing revealed a match between O.J.'s blood and the blood of someone other than the two victims found at the

crime scene. This evidence was used to support the claim that O.J.'s blood was at the scene. The implicit syllogism was as follows:

Major Premise 1:	Each human has unique DNA.
Major Premise 2:	DNA tests can accurately identify a match between a known person's DNA and that of an unknown offender at a crime scene.
Minor Premise:	O. J.'s DNA matches that found in blood at the crime scene.
Conclusion:	Therefore, O. J. was the killer.

Comment: Note that this example uses 2 major premises, that is, two general statements. For the practical purposes of trial, there is no need to explore the technicalities of formal logic further. You should simply be aware that real arguments may have several general statements and several more specific ones. It is less important that you be able to label premises accurately as "major" or "minor" than that you understand that the argument must proceed from the most general statement to increasingly more specific ones.[1]

The syllogistic model of the form illustrated above greatly over-simplifies the true nature of the arguments involved. A DNA expert does not in fact testify that O.J.'s blood and crime scene blood are the same. Rather, the expert testifies that there is a certain "probability" of a match, which is a much more cautious statement than the flat assertion that there is indeed a match. Nevertheless, juries may use expert testimony in syllogistic fashion. Perhaps more importantly, the syllogistic model, while not 100% accurate, helpfully focuses our attention and trial planning on what a proponent must prove to prevail. Thus the probative value of DNA evidence requires the prosecution to prove something close to the general statements in major premises 1 and

[1] The use of more than one major or minor premise might arguably violate certain principles of formal logic. *See* Ruggero J. Aldisert, Logic for Lawyers: A Guide to Clear Legal Thinking 146 (1989). That problem can be avoided by breaking up what is presented here in the form of a single syllogism into multiple shorter syllogisms involving only one major and one minor premise each. *Id.* Nevertheless, this quicker and more informal way of proceeding, using multiple major and minor premises in a single "syllogism," is useful for the practical purposes of trial preparation; more closely mimics the implicit reasoning processes of practicing lawyers; and has proven itself to be a valuable educational tool. *See, e.g.* T.R. van Geel, Understanding Supreme Court Opinions 44 (1991) (effectively using a similar method as a way to teach students to analyze United States Supreme Court opinions on constitutional law). Furthermore, some leading evidence scholars, without using the "syllogism" terminology, have used essentially the same method: a series of premises, moving from the most general to the most specific, that must be true to support an expert's conclusion. *See* David L. Faigman, et al., Modern Scientific Evidence: The Law and Science of Expert Testimony § 1-3.3.1, at 24–25 (1997). The "syllogism" terminology is used here for ease of reference and to emphasize the importance of identifying premises *and identifying proof* that each premise is true, since these concepts are well-illustrated in the language of syllogisms. It is the practical value of this approach as a teaching and trial preparation tool that matters more for the purpose at hand than do the complexities of formal logic, for this approach is unlikely to lead a student or practitioner into logical error. Furthermore, while there are ways to conceptualize the expert rules other than in terms of a syllogism, the syllogism offers clarity (without distortion) to what often seems, especially to students, like chaos. *See* Edward J. Imwinkelried, *Educational Significance of the Syllogistic Structure of Expert Testimony*, 87 Nw. U. L. Rev. 1148 (1993).

2 above: that each human has unique DNA and that it is identifiable by testing. These are assertions that apply to any DNA. In addition, the prosecution must prove something close to the minor premise statement specific to *this case* before *this jury*: that O.J.'s unique DNA matches that in blood found at the crime scene. Moreover, the simplistic syllogism offered here can be expanded, or syllogisms can be placed within syllogisms, or other sorts of reasoning processes combined with the overall syllogism to improve its usefulness. For example, two other premises might be:

Major Premise:	Any DNA testing must involve steps A through D done in a specified manner, to produce a high degree of confidence in the claimed existence of a match.
Minor Premise:	The DNA testing in O. J. indeed involved steps A through D done in the properly specified manner.
Conclusion:	Therefore, we can have a high degree of confidence in the claimed match between the crime scene blood and O. J.'s blood.

In the real case, the defense, of course, argued in part that the DNA testing concerning the blood in this case was flawed: steps were missing or were done in an improper manner, so there could be little confidence in the claimed match.

Problem 9-1: Radioactive Taggants

A federal office building was bombed in downtown Chicago, killing many, injuring many more, and reducing the building to rubble. The bomb used was apparently a homemade one, combining some fertilizer ingredients with fuel oil. But the detonating device contained commercially-produced materials, including a fuse. The fuse contained a radioactive taggant. A "taggant" is a radioactive molecule placed into the fuse as a tracking device. Its presence is designed to enable law enforcement to track the precise lot of fuses involved and thus to locate the store where this particular fuse was sold. That store's customer list then enables the FBI to link the fuse to a purchaser, who becomes a criminal suspect. Somewhat different taggants are used in each lot so that each lot of fuses has its own distinctive taggant "signature." However, sometimes one lot's taggants touch and thus "contaminate" another lot. This problem can arise at the retail level, where one lot sitting on a shelf may leave a residue that then affects another lot stored in the same location. Lab-testing errors also occasionally result in the misidentification of a particular taggant and thus of a particular lot. Moreover, undue exposure to direct sunlight sometimes causes a chemical reaction that skews lab results. Furthermore, although they are rare, the same radioactive isotopes used in these taggants sometimes appear in other natural or man-made substances in everyday use.

1. Richard McDear is on trial for planning the explosion. Write out the expert syllogism that must be proven if the prosecution seeks to introduce expert testimony linking McDear to the explosion as a purchaser of a fuse from a lot marked with a taggant found in fuse remnants at the bomb site.

2. What witnesses should the prosecution call to prove each of the major and minor premises? What sorts of questions should be asked of each witness?

3. What sorts of questions will the defense ask of each of these witnesses to challenge admissibility? What information might the defense seek in discovery and from whom?

Problem 9-2: Rape Trauma Syndrome

The term "rape trauma syndrome" (RTS) has many meanings, but is being used in Ethan Dogard's rape trial to mean a collection of post-rape symptoms often experienced by rape victims. These symptoms include depression, fear of men or of being alone, "flashbacks," difficulty concentrating, and a generalized sense of anxiety and guilt. Not all rape victims display these symptoms and some victims display some symptoms but not others. Some victims exhibit behaviors not listed in the RTS criteria or show no unusual symptoms of any kind. Moreover, some women who have not been raped may also display some or all the RTS symptoms.

Dogard's defense is consent. He calls an expert psychologist to the stand who, pursuant to court order, examined Dogard's alleged victim. The psychologist will opine that the victim displayed none of the symptoms of RTS. Dogard's lawyer will argue that this conclusion shows that the victim engaged in consensual, unforced sexual intercourse and was, therefore, not raped.

1. Write out the expert syllogism that Dogard's counsel must prove to get this psychologist's opinion admitted into evidence at trial.

2. What witnesses should the defense call to the stand to prove each of the major and minor premises? What sorts of questions should be asked of each witness?

3. What course of action should the prosecution take to combat the admission of the expert's testimony and why?

[C] Why Special Expert Admissibility Rules Are Needed

Courts and legislators have long feared jurors' reactions to expert testimony. Juries are thought to be so "overawed" by experts that they will defer to the expert's opinions and abandon their obligation as jurors independently to judge the strength and credibility of the evidence for themselves. Alternatively, courts and scholars have feared the "battle of the experts" in which two experts, one representing each side in a dispute, offer diametrically opposite opinions. In such cases, argue critics, unsophisticated jurors will simply accept the word of the clearer, flashier, more likable expert rather than the one with the soundest bases for the opinion. The concern is that these aspects of trial theater, rather than reason, will lead jurors to follow a misleading or baseless opinion. Accordingly, the rules of evidence have long required expert opinions to pass special admissibility tests — tests raising

higher hurdles than those facing lay witnesses. While the Federal Rules of Evidence liberalized, that is, relaxed, some of these tests, the tests for experts were always, and still are, more stringent than those facing lay witnesses. Moreover, media stories of enormous civil verdicts based on "junk science" (alleged science with few adequate bases) have led to court interpretations of existing expert evidence rules, or legislative modification of those rules, in the direction of greater stringency.

Problem 9-3: Taggants Revisited

Review the facts of *Problem 9-1. Is expert testimony in that problem likely to raise any of the policy concerns that justify more stringent admissibility rules for admitting expert testimony as compared to lay testimony? Are there ways to address these concerns other than excluding the testimony?*

Problem 9-4: Rape Trauma Syndrome Revisited

Review the facts of *Problem 9-2. Is expert testimony in that problem likely raise any of the policy concerns that justify more stringent admissibility rules for admitting expert testimony as compared to lay testimony? Are there ways to address these concerns other than excluding the testimony? Is the case for admissibility of RTS stronger or weaker than the case for admitting expert taggants evidence in Problem 9-1?*

§ 9.04 PRESENTATION OF EXPERT TESTIMONY

[A] Rule 702 — Helpfulness of Expert Opinion and Qualifications of Expert

Expert testimony is addressed specifically by Federal Rules of Evidence 702, 703, 704, and 705. The first of these rules that we will explore is Rule 702, which originally read as follows:

Rule 702. Testimony by Experts

> If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education may testify thereto in the form of an opinion or otherwise.

Rule 702 was later amended to add the following proviso to the end of the rule:

> provided that (1) the testimony is based upon sufficient facts or data, (2) the testimony is the product of reliable principles and methods, and (3) the witness has applied the principles and methods reliably to the facts of the case.

The reasons for this addition to Rule 702 will be explored later in this chapter. For now, the interesting point is that the modification had the effect of more clearly codifying the syllogistic approach to expert evidence questions outlined here. Provision (2)'s reference to "reliable principles and methods" concerns the major premises, for example, that each human being has unique fingerprints and that a method exists for accurately identifying those unique fingerprints. Provision (3) concerns the minor premises, e.g., that fingerprints were properly taken from a specific suspect and crime scene and that the method for accurately matching that suspect's prints to those at the scene was properly applied in the case before the court. Provision (1) is ambiguous; it may apply to both the major and minor premises or instead only to the latter, a matter we will address shortly. We pay significant attention to this amendment because it helps to clarify many issues of expert evidence.

Having established that special admissibility rules are needed for expert testimony, we now examine in greater detail what those rules are and what they mean. This section looks at when it is appropriate to admit expert testimony, when an expert is qualified to offer expert evidence, and the proper manner for presenting expert testimony. These subjects lay the groundwork for the rest of the chapter, which examines when a qualified expert's opinion should be seen as based on solid general principles properly applied to the case at hand.

We earlier discussed the distinction between "lay" and "expert" testimony. We must return to that distinction here because an expert must be qualified to offer an opinion on the particular subject concerning which the expert's opinion is being sought. A person who is an expert on some things may be a mere layperson on others. Expert opinion should be limited to those matters about which the witness has adequate *expert* qualifications.

Example 1

Dr. Joseph Lewis, a skilled heart surgeon, is called to testify in a medical malpractice trial that another heart surgeon, Dr. Jesse Smith, improperly performed an angioplasty (insertion of a small tube to open up a blocked artery feeding the heart). Dr. Lewis would arguably be qualified to offer such an expert opinion. Suppose, however, that, instead of testifying about heart surgery, Dr. Lewis were called to testify in a dental malpractice trial that Dr. Bright, a dentist, had offered inadequate dental care. In that case, Dr. Lewis' opinion, as a heart surgeon, would be little more informed about dental care than a layperson's; it would be inadmissible.

What if Dr. Shine, a renowned dentist, were called to the stand at Dr. Bright's trial for dental malpractice, to opine that Bright's patient, Harvey Bateson, was in great pain for many days after being treated by Dr. Bright? Is Shine any more qualified than Bateson himself, or perhaps Bateson's wife or employer, to offer the opinion that Bateson was in pain?

The answer to this last question shows a close link between what *qualifications* are required for a person to be eligible to testify as an expert and what *topics of inquiry* are appropriate for an expert opinion. Some common-law cases have said that the only proper topics of inquiry of an expert are those

"beyond the ken of laypersons." However, this means that experts must have *qualifications* enabling them to offer opinions on matters that laypersons (including jurors drawing their own inferences) could not. Of course, on the question of dental patient pain, it might be argued that no opinion is necessary at all, lay or expert. Any witness-observer might describe Bateson's grimaces, tears, and screams, from which jurors could infer that Bateson was in pain. Moreover, if some opinion is needed, it should be "within the ken" of laypersons to offer and understand it.

If, however, Dr. Shine wanted to testify that he could tell the difference between faked and real pain, based on training unavailable to laypersons, that would indeed be a subject "beyond the ken" of laypersons. But Shine would have a hard time showing that he was specially qualified by "knowledge, skill, experience, training, or education" to offer such an opinion. Dentists, unlike polygraphers (lie detector technicians), do not get any special training on how to spot their patients' lies. (Of course, close examination of the underlying empirical research would be necessary to determine whether polygraphers' special training actually makes them any better than dentists at lie identification.)

The Federal Rules of Evidence relax the common law "beyond the ken" requirement. All that is necessary is that the testimony will be helpful, that is, will "assist the trier of fact to understand the evidence or to determine a fact in issue." Under this standard, experts may testify about topics that concern matters within the general knowledge of jurors, if they have special qualifications such that their opinion will nevertheless aid the jury. The Advisory Committee Note explained the topics-of-inquiry (helpfulness) link to expert qualifications this way:[2]

> There is no more certain test for determining when experts may be used than the common sense inquiry whether the untrained layman would be qualified to determine intelligently and to the best possible degree the particular issue without enlightenment from those having a specialized understanding of the subject involved in the dispute.

Note that the Advisory Committee Note expressly links "when experts may be used" (What are the proper *topics* of expert testimony?) with whether the expert is one of "those having a specialized understanding of the subject involved in the dispute" (Is the expert "qualified"?). Furthermore, the Note stresses that qualifications and topic-appropriateness must be measured as to "the particular issue" about which the expert will testify. The expert need not, however, refer only to matters "beyond the layman's ken" but rather may address any topic that enables the jury to determine an issue to "the best possible degree" by hearing from the expert. Perhaps the existence of dental pain is within lay experience. But an expert's opinion that a particular patient

[2] Rule 702, Advisory Committee Note, quoting Ladd, *Expert Testimony*, 5 Vand. L. Rev. 414, 418 (1952) (emphasis added).

was in more pain than the vast majority of other patients that the expert dentist treated in his long career might nevertheless allow the jury to make a more accurate and informed judgment.

Example 2

Jolinda offers the testimony of an expert on battered women's syndrome, who will testify that: (a) some battered women display a fear of great harm from their abusers in situations where danger may not be apparent to non-battered third parties; (b) these women see no safe way to escape when others might; and (c) Jolinda suffered from BWS, and was fearful that her husband would kill her.

Comment: A common-law court might hold that fear of assault and inter-spousal disagreements are within the "ken" of ordinary laypersons. Under the Federal Rules of Evidence, by contrast, a court might concede that fact but nevertheless admit the evidence after concluding that it would be helpful for jurors to learn of the experiences and behaviors of other battered women. With that information, they could more effectively judge Jolinda's credibility and, if finding her truthful, better see the world through her eyes.

The syllogistic nature of expert testimony must also be kept in mind in judging an expert's qualifications, as in the following example.

Example 3

John O'Barr, the President of a major university, is being charged with making obscene phone calls. One of his victims has tape-recorded all his phone calls. Pursuant to a court order, O'Barr has tape-recorded himself reciting a specified script. The prosecution wants to offer a voice-print analysis to prove that the voice on the tape of the obscene phone caller matches O'Barr's voice. The term "voice-print" is commonly used to refer to a spectrogram, which is a visual representation of a human voice's qualities.

The prosecution calls Ronald Nelson, a police officer spectrogram technician, to the stand as the prosecution's sole expert witness. Nelson has a high school degree and has attended five training sessions on how to administer spectrograms. He has administered more than 50 voice spectrograms over the course of ten years; in each case he testified as a voice spectrogram expert at a criminal trial. O'Barr's counsel objects on the ground that Nelson is not adequately qualified to establish the foundation necessary for his expert opinion.

The trial court should sustain the objection. The implicit syllogism is as follows:

Major Premise 1: Each human has a unique voice.

Major Premise 2:	The voice spectrogram analyzer is a device that accurately records each person's voice's features and correctly represents those features in a written diagram.
Major Premise 3:	Voice spectrogram analyzer accuracy depends on the technician's following certain specified procedures.
Minor Premise:	Those procedures were accurately followed in matching O'Barr's voice tape to the obscene phone caller's voice tape.
Conclusion:	O'Barr made the obscene phone calls.

Comment: Police Officer Nelson is definitely qualified to testify concerning the minor premise, that is, to describe what procedures he followed in doing spectrographic analysis. He is probably qualified to testify as to Major Premise 3, that is, to explain what are the proper procedures. But he is not qualified to testify concerning the first two major premises. Only a scientist, preferably an academic who has done research in, or is at least familiar with, voice spectrographic analysis or voice identification more generally would be qualified to testify that each human voice is unique and that the principles and methods involved in the voice spectrograph make it a reliable way of identifying otherwise unknown speakers. Thus, the prosecution can cure Nelson's qualifications problem by limiting his testimony to Major Premise 3 and the Minor Premise and calling an unbiased but well-credentialed scientist to the stand to testify concerning the first two major premises.

Some commentators have suggested that, in addition to an expert on general principles and methods (here, the scientist) and one on the proper application of those methods in a particular case (here, Officer Nelson), we also need an expert on how to interpret the results of that application. Thus Nelson might arguably be qualified to testify that he followed proper procedures but lacks, the combination of theoretical training and practical experience to interpret the resulting spectrograms, that is, to say, "Yes, these are from the same person." Three separate experts are not always necessary. A single witness, such as a voice identification scientific researcher with ample practical experience administering and interpreting spectrograms, might serve all three expert roles: as theorist, technician, and interpreter.

A lawyer seeking to establish, or to challenge, an expert's qualifications must explore issues such as the following: (1) the expert's formal education and degrees received, (2) the expert's specialized training in his or her field of expertise, (3) the time the expert has spent practicing in that field, (4) the expert's professional licenses, teaching experience, publications, and membership in professional organizations, and (4) previous testimony given by the

expert. Pretrial discovery may well arm an advocate with knowledge about these aspects of the expert's qualifications, especially in civil cases, where depositions are more likely to be available.

Example 4

A portion of a sample voir dire qualifying an expert witness follows. This voir dire (as used here, the term means the questioning done to establish the foundation for admitting expert testimony as qualified) arises at a hearing to determine the competency of a criminal defendant to stand trial. The prosecution calls Dr. Susan Trautman Borg to the stand as an expert in the psychiatric diagnosis and treatment of mental illness.

PROSECUTOR: Good morning, Dr. Borg. Please state your full name for the record and spell it for the court reporter.

A: Susan Trautman Borg, M.D.

PROSECUTOR: What is your educational background?

A: I received my B.A. and M.D. degrees from Case Western Reserve University. After graduating, I did my internship and residency at Jackson Memorial Hospital in Miami. I had a post-doctoral fellowship in psychiatry at the National Institute of Mental Health in Washington, DC.

PROSECUTOR: Are you employed?

A: Yes, at the South Allenton State Psychiatric Facility.

PROSECUTOR: What is your job at South Allenton State?

A: I am the Director of Psychiatric Services.

PROSECUTOR: How long have you worked there?

A: I have been the Director for seven years. I began at South Allenton as the head resident, spent two years in that position, and then served as Associate Director for three years.

PROSECUTOR: How many patients have you treated for psychiatric illness in those seven years?

A: Based on the Diagnostic and Statistical Manual III-R, which is generally used by psychiatrists and psychologists, I'd say quite a few. Probably several hundred.

PROSECUTOR: What are your job responsibilities?

A: I currently handle a reduced caseload of approximately 10 to 15 patients along with my administrative duties. These duties involve overseeing a department of 20 psychologists, 10 social workers, and 75 other staff members.

PROSECUTOR: What does Board-certified in psychiatry mean?

A: Board certification exists in various medical specialties. In psychiatry, it means that the psychiatrist has passed an examination designed to ensure an advanced degree of knowledge in the field of psychiatry and has been approved by the American Board of Medical Specialties. To become Board-certified, a person must first become Board-eligible, which requires successfully completing several prerequisites, including an examination. Only a small percentage of psychiatrists are Board-certified.

PROSECUTOR: What is your board status, Doctor?

A: I am Board-certified.

PROSECUTOR: Doctor, to which, if any, professional organizations do you belong?

A: I belong to the American Psychiatric Association, where I am the immediate past president.

PROSECUTOR: Have you published any writings in your field?

A: I published the paper "Psychotropic Drugs: the Good, the Bad, and the Ugly." in the journal Nature in 1991, and have co-authored approximately 50 other pieces in a wide variety of journals. Co-authoring is the general practice of scholars in my medical specialty.

PROSECUTOR: Have you ever testified as an expert in psychiatry?

A: About 150 times, mostly for the prosecution, but sometimes for the defense.

PROSECUTOR: Have you continued your education in psychiatry?

A: Yes. I take three continuing education courses in psychiatry each year, as required, and teach at Allenton University as an adjunct. I also participate in as many educational colloquia as time permits.

PROSECUTOR: Your Honor, I now offer Dr. Borg as an expert in the diagnosis and treatment of mental illness.

To recap: (1) There is a close connection between what topics of inquiry are appropriate for expert advice and what qualifications must be demanded of the expert. Accordingly, a good lawyer first carefully specifies the precise opinions the expert will offer, why those opinions will help the jury, and why the expert has the qualifications to offer the specific opinion requested. (2) A good lawyer also understands the syllogistic nature of expert testimony. With this understanding, the lawyer is able to determine all the premises involved in proposed expert testimony and which experts are qualified to testify about the various premises in the syllogism-specifically, in the roles of theorist (educator), technician, and interpreter.

Problem 9-5: Bomb-Blast Terrorism

Assume the facts stated in Problem 9-1:

1. Who would you, as the prosecutor, call to the stand as an expert in the *McDear* case? Would you need more than one expert? Remember the roles of educator, technician, and interpreter and the syllogistic nature of expert testimony.

2. What questions would you ask the expert (or experts) to qualify him (her or them)? Be ready to conduct the qualifying examination in class.

Problem 9-6: Rape and Consent

Assume the facts stated in Problem 9-2:

1. Who would you, as the defense counsel, call to the stand as an expert? Would you need more than one expert? Remember the roles of educator, technician, and interpreter and the syllogistic nature of expert testimony.

2. What questions would you ask the expert (or experts) to qualify him (her or them)? Be ready to conduct the qualifying examination in class.

Problem 9-7: The Inaccurate Eyewitness

Dr. John La Rue is an academic psychologist specializing in the areas of the accuracy of human perception and memory. Jonathan Brill was robbed at gunpoint at an ATM machine at 10 p.m. during October. Mr. Brill gave a description of his assailant to the police that night. Approximately 72 hours later, Brill picked the defendant, Horace Weatherwax, out of a lineup, saying, "I'm certain that's the man. I'd never forget that face." The defense calls Dr. La Rue to the stand at Weatherwax's trial to discuss the factors that affect the accuracy of eyewitness identifications generally, what factors were present in this particular case and their significance, and to opine that Brill's identification of Weatherwax was not trustworthy.

Which of the following are relevant to qualifying (or disqualifying) Dr. La Rue as a witness:

1. He has published 17 articles on the impact of various traumas (war wounds, child abuse, and spousal abuse) on human perception and memory.

2. His Ph. D was in clinical psychology rather than experimental psychology.

3. He has never specifically done research on the accuracy of eyewitness identification.

4. He teaches, and has for the past 10 years taught, an undergraduate course on the accuracy of eyewitness identification.

5. He has extensively read the literature on eyewitness identification accuracy.

6. He published an article in Psychology Today on the accuracy of bystander eyewitness testimony, as distinguished from testimony by the victim.

7. He has testified concerning eyewitness accuracy in 50 cases, each time testifying for the defense.

8. He has provided psychotherapeutic counseling to Mick Jagger, Tom Crews, and other well-known musicians and actors.

9. He received his degree from a little-known small-town night school.

10. He is president of the American Society of Forensic Psychologists.

If Dr. La Rue is offered as an expert witness and the prosecution asks to voir dire the witness, will the judge allow it? If so, what kinds of questions should the prosecution ask Dr. La Rue?

Problem 9-8: Dr. Borg

Review the illustrative voir dire of Dr. Borg in Example 4, *above*. *Even after this voir dire, are there plausible grounds for objection to her qualifications to offer an opinion regarding whether the criminal defendant (asserting an insanity defense) suffered from a particular mental disease or defect at the time of the crime and to explain the significance of that disease or defect? What sorts of additional questions on the voir dire by the prosecution could have reduced*

the chances of such objections? Why did the prosecutor ask each of the questions that she did?

[B] Direct Examination of Experts

[1] The Hypothetical Question and the Four Data Sources

There are four potential sources of data on which an expert may base an opinion:

1. Firsthand observations made by the expert out of court. For example, a dermatologist testifies about the color, shape, feel, and smell of a rash that she observed on a patient's arm.

2. Information provided to an expert in the courtroom that the expert is asked to assume is accurate.

3. An expert's observation of in-court testimony by one or several witnesses.

Example 1

The issue in a negligent driving case in which the driver's passenger was seriously injured is whether the driver exceeded the 55 mph speed limit. A police officer who arrived on the scene shortly after the accident describes his observation of the length of skid marks and the extent and nature of the damage to the defendant's car. The emergency room physician describes the plaintiff's injuries. A physicist who has listened to the officer's and the physician's testimony is later asked whether, assuming the truth of that testimony, the physicist has an opinion about what speed the defendant's car was traveling at the time of the accident.

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4. Facts or data made known to the expert out of court, such as a forensic internist opining about the reasons for a diagnosis, which include x-ray reports and lab tests done by other doctors and technicians that the expert examined prior to trial.

Traditionally, courts often required experts to base their opinions on facts or data that were already admitted into evidence, or at least facts that were admissible. Thus, data source category 4 (facts or data presented to the expert out of court) could not, in the strictest versions of the traditional rule, be the basis for expert opinion unless those facts or data were separately admitted into evidence. Usually (but courts differed on this point) they would have to be admitted *before* the experts could recite their opinions for the jury. For example, the x-ray report and results would first have to be admitted into evidence before the emergency room physician in the last example above could offer the patient's diagnosis. In less restrictive versions of the traditional rule, the x-ray and lab results would, if not already admitted, have at least to be admissible.

These traditional rules were not especially troublesome for data sources 1 and 3 (first-hand observations made by the expert either in or outside of court) because such observations are usually admissible (unless unduly prejudicial under Rule 403). Also, observations can often be easily and concisely stated by the expert, who in this capacity serves more as an eyewitness (*e.g.* "He moaned in pain, had bruises across much of his calf, etc.," as recounted by an emergency room physician treating an automobile accident victim). But data sources 2 and 4, we will soon see, more often require the expert to rely on evidence whose admissibility is questionable. Trial courts needed to police expert opinions as being based on evidence that had been admitted (or at least was admissible) in evidence. To ensure that an expert revealed the bases of an opinion before offering it, courts traditionally often required that the opinions be elicited by a hypothetical question — a question asking the expert to assume certain listed facts to be true and to offer an opinion based upon that assumption. Courts sometimes failed to distinguish among the four data sources, and required hypothetical questions involving any of the four sources.

The most common sort of hypothetical question expressly stated, often in list-like form, every fact that the expert was asked to assume to be true:

Example 2

Dr. Johnson, a well-known physician, is called as a knee injury expert in a case in which the plaintiff/accident-victim's knee was treated in an emergency room. Dr. Johnson did not himself observe the plaintiff's injuries, nor has he ever treated the plaintiff. The direct examination includes this hypothetical question:

PLAINTIFF'S ATTORNEY: Dr. Johnson, please assume the following facts are true: One, Johnny Bender [the plaintiff] groaned when trying to bend his right knee. Two, he bent that knee slowly, never achieving more than a twenty degree angle. Three, the knee was swollen, red, and puffy. Four, the knee was bleeding profusely. Dr., given these assumptions, do you have an opinion, to a reasonable degree of medical certainty, as to the nature of Mr. Bender's knee injury?

For Dr. Johnson to be allowed to offer this opinion, another witness would have had to testify (or plaintiff would have had to promise to produce such a witness) that he or she observed the plaintiff's bloody, swollen, stiff knee and groans in the emergency room. The emergency room physician or, if present, the plaintiff's spouse, might be able to offer such testimony. Of course, the emergency room physician, rather than the high-priced Dr. Johnson, could also be queried about his diagnosis of the plaintiff. Many judges traditionally would have encouraged such queries also to be done in the form of a hypothetical question. Nevertheless, the plaintiff may still want to call the better-credentialed Dr. Johnson to the stand to buttress the emergency room physician's opinion about the extent of the plaintiff's injuries.

An alternative form of the hypothetical question, rather than reciting every fact to be assumed by the expert, simply asks the expert to assume the truth of the previous testimony of a witness or witnesses that the expert has heard testify in court:

PLAINTIFF'S ATTORNEY: Dr. Johnson, assuming the truth of the observations testified to today by Mr. Bender's spouse and the emergency room physician, do you have an opinion regarding when, if ever, Mr. Johnson will recover full use of his knee?

Such an approach may be misleading or confusing, however, if the testimony is conflicting or complex. In such a case, a court might require use of the more detailed, specific version of the hypothetical question.

Problem 9-9: Bomb-Blast Terrorism Continued

Review Problem 9-1 again. List all the facts that you think would be important to an expert opinion linking the defendant to the bomb blast via the taggants. You may need to speculate about the sorts of facts the experts might recount. Use that list to craft a detailed version of a hypothetical question.

Problem 9-10: Rape and Consent Continued

Review Problem 9-2 again. List all the facts that you think would be important to an opinion that the alleged victim did not suffer from RTS. You may need to speculate about the sorts of facts the experts might recount. Use that list to craft a detailed version of a hypothetical question.

[2] Liberalization Under the Federal Rules of Evidence

[a] Rule 703

The hypothetical question was often strategically advantageous to counsel. Attorneys were able to use a hypothetical question as a mini-summation during the trial. Furthermore, credibility might be lent to an advocate's case by asking a well-respected expert to assume the truth of the advocate's witnesses.

But the hypothetical question had down sides as well. Some such questions had to be quite lengthy, which made them boring and lengthened the trial. Hypothetical questions could construct a misleading, one-sided hypothesis. And much courtroom time was consumed by attorneys arguing for and against the inclusion of various details in hypotheticals.

Moreover, they opened the door to reversals on appeal if an appellate court later concluded that some of the assumed facts were not supported by other evidence in the trial. Additionally, reciting the bases for an opinion before hearing the opinion itself may have left the jury confused, uncertain of why the data presented in the hypothetical was important.

For reasons like these, the Federal Rules of Evidence rejected the requirements that: (1) expert opinions must be based only on admitted, or at least admissible, evidence; (2) the data underlying the opinion must be revealed before presenting the opinion itself; and (3) the hypothetical question is the preferred mode of inquiry. Lawyers remain free, however, to adhere to traditional approaches where they believe it is strategically wise to do so.

The first of these three changes to traditional rules is contained in the beginning two sentences of Rule 703 as originally drafted:

> The facts or data upon which an expert bases an opinion or inference may be those received by, or made known to, an expert at or before the hearing. If of a type reasonably relied upon by experts in the particular field in forming opinions or inferences upon the subject, the facts or data need not be admissible in evidence in order for the opinion or inference to be admitted.

The provision that inadmissible evidence may be the basis for an opinion only if "reasonably relied upon" by experts in the particular field retains a hint of the traditional rules. First, some opinions still may not be based on inadmissible evidence, if the evidence is not "reasonably relied upon." Second, if an advocate is concerned about this limitation, it may be avoided by seeking opinions based only on admissible evidence. Thus, counsel may in close cases have an incentive to adhere to more traditional rules.

Why retain these shades of the traditional rules? The implicit answer: because these remnants help prevent misleading end runs around the purpose of the rules of evidence, which is "to secure fairness in administration . . . to the end that truth may be ascertained and proceedings justly determined." (Rule 102.) While not expressly relying on Rule 102, the Advisory Committee Note to Rule 703 gives this example of how 703's limitations promote truth-seeking: "The language [of reasonable reliance] would not warrant admitting in evidence the opinion of an 'accidentologist' as to the point of impact in an automobile collision based on statements of bystanders, since this requirement is not satisfied." If the bystanders do not testify and cannot, therefore, be cross-examined, and if no exception to the hearsay rules justifies admitting their statements as reliable ones, then the expert's opinion is based on data whose adequacy will never be challenged before the jury and which lacks other guarantees of trustworthiness. Presumably, evidence relied upon by an expert that is independently admissible has survived the gauntlet of the other evidence rules, thus creating some minimal guarantee of trustworthiness. But nothing in an "accidentologist's" training increases the accuracy of bystander statements otherwise barred by the hearsay rules. Before we can have confidence in the expert's opinion being based on worthy data, we therefore at least require that the data either be admissible or be "reasonably relied upon" by experts in the field. We will explore what "reasonable reliance" means in more depth later in this chapter. Briefly, it is reasonable to rely on data that most experts in a given field would rely upon (say some courts) or data that the trial judge independently considers trustworthy (say other courts).

Even if an expert "reasonably relies upon" inadmissible data, does that mean that the expert may reveal that data to the jury? If the answer is yes, again an end run might be possible around other rules of evidence. Thus an advocate might intentionally ask the expert to interview persons who will not be at trial to enable the advocate indirectly to reveal (via the expert) those persons' otherwise inadmissible hearsay statements. Yet some commentators have concluded that a new hearsay exception should be established for the data underlying an expert opinion that complies with Rule 703's reasonable reliance requirement. *See, e.g.*, Paul Rice, *Inadmissible Evidence as a Basis*

for Expert Opinion Testimony: A Reply to Professor Carlson, 40 Vand. L. Rev. 583 (1987). Other courts and commentators permit revelation of the reasonably relied upon but otherwise inadmissible bases of expert testimony only on a non-hearsay rationale. The jury is instructed that it may not consider these bases for the truth of what they assert. Rather, the jury is told that the bases are offered only so that the jurors know on what the expert relies, thus enabling jurors to judge the credibility of the expert's opinion. If the jury sees no reason to believe that such bases in fact exist, or concludes that there were other ignored bases that the expert should have considered, the jury may choose not to credit the expert's opinion. Juries will often, however, use the recited bases precisely for the prohibited purpose — to prove the truth of what they assert — despite a court's instructions to the contrary.

Example

A physician testifies, based partly upon lab test results, that a patient suffered from a certain type of infection. Assume that the lab report is inadmissible, perhaps because the records were not kept in the way expected in the ordinary course of business (which would violate hearsay rules to be studied later). May the physician nevertheless reveal the content of the lab report to the jury, so long as the lab report contains a "type" of fact or datum "reasonably relied upon by experts in the field"? The proponent of such disclosure will argue that jurors cannot evaluate the worth of the physician's opinion without knowing the contents of the lab report on which he relied. The jury can simply be instructed that it may not use the statements in the lab report for the truth of what they assert, only to assess the credibility of the expert's opinion. For example, was there thorough investigation by the expert? Does evidence other than the statements themselves suggest that they were right? The opponent of such revelation will argue that the jury will improperly use the lab report for the truth of what it asserts, and that such use would both violate hearsay rules and unfairly prejudice the opponent under Rule 403.

To reduce the incentive for attorneys to use experts as conduits for inadmissible hearsay, Rule 703 was amended and the following language added to the end:

> *Facts or data that are otherwise inadmissible shall not be disclosed to the jury by the proponent of the opinion or inference unless the court determines that their probative value in assisting the jury to evaluate the expert's opinion substantially outweighs their prejudicial effect.*

This amendment emphasizes that the purpose of Rule 703 is to specify circumstances when an expert *opinion* or inference is admissible. It does not render the otherwise inadmissible bases for that expert opinion freely admissible as substantive evidence. Thus, Rule 703 does *not* create an exception to

the hearsay rule. *See* Advisory Committee Note to 2000 amendment. Underlying bases may be revealed under the specified conditions, but "the trial judge must give a limiting instruction upon request, informing the jury that the underlying information must not be used for substantive purposes." *Id.* That is, the information is admitted only so that the jury can know the opinion's basis and thus better assess its credibility. But the amendment provides a "presumption against disclosure to the jury." *Id.* A significant burden is thus placed on the proponent to overcome that presumption. This balancing test should be contrasted with the test under Rule 403, which favors admissibility of relevant evidence by excluding it only if its probative value is substantially outweighed by unfair prejudice and related concerns. Rule 703 takes quite the opposite approach; it presumes that the inadmissible bases for expert opinion are unfairly prejudicial, but will admit those bases if their probative value in assisting the jury to evaluate the expert's opinion substantially outweighs their prejudicial effect. In engaging in this balancing process, the trial judge must consider the probable effectiveness or lack thereof of a limiting instruction. *Id.*

The amendment to Rule 703 applies only to evidence of the underlying bases when offered by the *proponent* of the expert. It does not restrict "the presentation of underlying expert facts or data when offered by an adverse party." *Id.* Thus, it does not prevent the presentation of underlying facts or data on cross-examination of the expert by an adverse party. Importantly, an adversary's attack on an expert's basis on cross might open the door to an opponent's rebuttal with information that was reasonably relied upon by the expert but not initially discloseable under the balancing test. *Id.* However, in a multi-party case, even if only one party proffers the evidence, each party for whom evidence is beneficial is considered a "proponent." *Id.* Finally, amended Rule 702, not amended Rule 703, governs an opinion's reliability, regardless of whether the opinion is based on admissible or inadmissible evidence, a point that will be made clearer when we return to it later.

Rule 703 is closely related to Rule 705, so we will examine the latter before analyzing problems involving both rules.

[b] Rule 705

Rule 705 embodies two changes from the traditional rules. It permits an opinion to be stated before its bases are revealed (or not to reveal the bases on direct examination at all). The rule also provides that hypothetical questions are no longer required:

> The expert may testify in terms of opinion or inference and give reasons therefor without first testifying to the underlying facts or data, unless the court requires otherwise. The expert may in any event be required to disclose the underlying facts or data on cross-examination.

The Advisory Committee Note makes clear that eliminating the frequent requirement of presentation by a hypothetical question was one major goal of Rule 705. Although it is no longer required, the direct examiner might choose, for strategic reasons, nevertheless to proceed via hypothetical. *See also*

Rule 702, Advisory Committee Note ("The language 'facts or data' is broad enough to allow an expert to rely on hypothetical facts that are supported by the evidence"). If the hypothetical is short, clear, and punchy, it offers the proponent the traditional advantage of a mini-summing up mid-trial. Regardless of whether a hypothetical question is used, Rule 705 gives the advocate the flexibility to determine *when*, if at all, to reveal the bases for an expert opinion at trial. Many advocates find it effective to elicit the opinion first, then its bases, enabling jurors to understand why the bases matter, to give them a road map:

Example

Dr. Reginald Gobert, a renowned psychiatrist, takes the stand at defendant Johannes Brahms' criminal trial in support of his insanity defense. Defense counsel, after eliciting Dr. Gobert's credentials, proceeds on direct examination as follows.

DEFENSE COUNSEL: Did you personally examine Mr. Brahms to assess his mental capacities at the time of the crime?

A: Yes, I examined him on at least four occasions, for a total of ten hours of observation.

DEFENSE COUNSEL: Of what did your examination consist?

A: I interviewed him extensively about his background and his current thoughts and feelings; I observed his demeanor, the clarity and responsiveness of his speech, whether he made eye contact; and I administered a variety written tests. [Gobert then explains what these tests and other observations involved and why they mattered].

DEFENSE COUNSEL: Did you engage in any other investigations besides meeting with the defendant to form an opinion about Mr. Brahm's mental state at the time of the alleged crime?

A: Yes. I read all the police reports; reviewed his school and employment records and his physician's files; and interviewed his family, friends, teachers, and current co-workers.

DEFENSE COUNSEL: Based upon these investigations, did you form an opinion to a reasonable degree of professional certainty whether Mr. Brahms suffered from a mental disease or defect at the time of the crime?

A: Yes.

DEFENSE COUNSEL: What is that opinion?

A: He did then, and still does, suffer from the mental disease of paranoid schizophrenia.

DEFENSE COUNSEL: What is paranoid schizophrenia?

A: [Here Dr. Gobert explains the symptoms of the disease]

DEFENSE COUNSEL: What are your reasons for reaching that conclusion?

A: He repeatedly insisted that he is really Napoleon Bonaparte reborn, making this point not just to me but to all his family and friends for at least two years before this incident. Moreover, [here Dr. Gobert recites the bases for the

opinion in detail and then explains why each is significant, that is, why it supports his conclusion].

Defense counsel's manner of proceeding here — eliciting the opinion before asking for recitation of its bases — was traditionally unacceptable but is perfectly appropriate under Rule 705. Indeed, under Rule 705, defense counsel need not have begun, as he did in the above example, by reciting the general sorts of investigations he undertook (that is, for example, noting that he interviewed the defendant without then recounting what the defendant said). Rather, defense counsel could have simply proceeded this way:

DEFENSE COUNSEL: Do you have an opinion to a reasonable degree of professional certainty whether Mr. Brahms suffered from a mental disease or defect at the time of the crime?

A: Yes.

DEFENSE COUNSEL: What is that opinion?

A: He did then, and still does, suffer from paranoid schizophrenia.

DEFENSE COUNSEL: What is paranoid schizophrenia?

A: [Here Dr. Gobert explains].

DEFENSE COUNSEL: What investigations did you do to help you reach your opinion?

A: [Here Dr. Gobert notes that he interviewed the defendant and his family id friends, etc.]

Q: What were the results of those investigations, that is, the bases for your opinion?

A: [Here Dr. Gobert recites what the defendant and his family an friends actually said during the interviews, what the test results were, etc.]

The order of examination is thus generally in the advocate's control. However, there are other problems with the manner in which Dr. Gobert's opinion was elicited, as we will soon see in examining the ultimate issue rule.

Some have objected to Rule 705's liberalization of traditional rules because they allow a direct examiner to choose not to elicit any bases at all. That would place the cross-examiner in the perhaps awkward position of eliciting bases for the first time, possibly thereby inadvertently injuring his own case. Such concerns are overblown. Significant pre-trial discovery of expert opinions and their bases is now standard procedure, especially in civil cases. A cross-examiner should, therefore, be well aware of the nature and bases of opinions to be expressed by the opponent's expert. Cross-examiners can thus elicit what they believe will help their client and harm the opposition. Moreover, where this is not the case (that is, in jurisdictions following Rule 705 but with limited discovery), the trial court has discretion under the rule to require disclosure of bases on direct, for example, where necessary to prevent unfair surprise. Finally, sound strategic reasons encourage proponents to reveal the bases for expert opinions on direct. Juries are simply not likely to credit raw opinions unsupported by convincing facts or data, especially if an opposing expert offers a well-supported opinion. An advocate might withhold some bases on direct in the hope that they will be more powerful if elicited by the opponent on cross.

But that scenario is likely only if the opponent did inadequate investigation or if the trial is set in a jurisdiction with very limited expert discovery; otherwise, there would be no prospect of the opponent's being surprised by the witness' answers.

Problem 9-11: The Gullible Personality

Ms. B was charged with knowingly possessing nine stolen welfare checks. The prosecution's undisputed evidence showed that six checks, made out to different payees, were given to Ms. B by her boyfriend's good friend, Scott. Ms. B deposited the checks, which supposedly had been endorsed to Scott, into her account. One check was returned unpaid and her account was charged accordingly, but Scott made good her loss. He subsequently gave her three more checks to deposit. The prosecution's theory is that Ms. B "must have known" that the checks were stolen, but Ms. B testified that she did not in fact believe that the checks were stolen; she believed Scott's story that the checks had been given to him in payment for a debt, and he needed her assistance because he had no bank account of his own.

Ms. B calls a psychologist to the stand at trial to testify that Ms. B's personality is characterized by an unusually high degree of gullibility and dependency. To reach this conclusion, the psychiatrist, Dr. P, administered various psychological tests, interviewed Ms. B, and interviewed: (1) her parents, who described numerous instances in which Ms. B, as a child, believed clear lies told her daily by her brother; (2) Ms. B's ex-husband, who admitted to cheating on Ms. B with other women, then telling ridiculous lies (all believed by Ms. B) to cover his deception; (3) Charlene, Ms. B's lifelong close friend, who said that she and Ms. B had used hallucinogenic drugs for ten years; and (4) Ms. B's childhood teachers, who described numerous violent assaults by Ms. B on other children. All those interviewed are outside the subpoena power of the court, and none of their statements fit within any hearsay exception or exclusion. Moreover, the results of some of the psychological tests administered by Dr. P, such as the Rorshach test and the Thematic Apperception Test, are inadmissible because they have been held by the state's appellate court to be unreliable. However, some of the other tests, such as the Myers-Briggs Personality Test, have been held to be reliable. Furthermore, the trial court ruled that Dr. P's opinion meets the *Daubert* test (discussed later in this chapter), requiring an expert opinion to be "relevant and reliable" as to its major premises, and the court ruled that the expert is well-qualified.

1. May Dr. P testify to his opinion that Ms. B has an unusually gullible personality?

2. If yes, should the trial judge permit Dr. P to reveal all of the bases for the opinion to the jury? Only some of those bases? Which ones and why? As a strategic matter, how many of Dr. P's bases will Ms. B want to elicit?

3. What questions would you use to elicit Dr. P's opinion in a form other than a hypothetical question and why?

4. Strategically, should Ms. B's counsel use a hypothetical question or some other sort of question to elicit Dr. P's opinion? Craft an appropriate hypothetical question.

5. What questions would you, as Ms. B's counsel, ask to elicit whatever bases you desire from Dr. P?

6. What questions should the prosecutor ask of Dr. P on cross-examination, and does Ms. B's counsel have any plausible grounds to object to those questions?

7. Are there any rules other than the expert evidence rules (Rules 702 through 706) that may be plausible grounds for objecting to any portions of Dr. P's testimony, whether on direct or cross? Why?

Problem 9-12: The Negligent Radiologist

John MacKinnon brings a wrongful death suit against Dr. Reginald Robinson for failing to diagnose Mr. MacKinnon's wife's breast cancer at an early stage. Dr. Joseph DePaul, a renowned radiologist, is called to testify as an expert regarding whether Dr. Robinson failed to exercise the expected degree of care in his field.

PLAINTIFF'S ATTORNEY: Dr. DePaul, do you have an opinion regarding when a competent radiologist would first have spotted Ms. MacKinnon's breast cancer?

A: Yes.

PLAINTIFF'S ATTORNEY: What is that opinion?

DEFENDANT'S ATTORNEY: Objection! Dr. DePaul has not provided the bases for his conclusions before offering them.

1. Is defense counsel correct? Why or why not?

PLAINTIFF'S ATTORNEY: Doctor, assuming that the mass was observable on the mammogram taken on October 1 but Ms. MacKinnon was not advised by Dr. Robinson or anyone else of that fact until the following March 1, what impact did that have on Ms. MacKinnon's survival chances?

DEFENDANT'S ATTORNEY: Objection! Calls for speculation!

2. How should plaintiffs counsel respond to this objection?

PLAINTIFF'S ATTORNEY: What do you rely on for your conclusion that Ms. MacKinnon would have had a very significantly greater chance of surviving her cancer had it been diagnosed in October?

A: Well, the lab report dated February 25 said . . . .

DEFENDANT'S ATTORNEY: Objection! Hearsay.

3. How should plaintiffs counsel respond to this objection?

The trial judge now gets into the act:

JUDGE: Doctor, what is the basis of your conclusion that as of October 1 the mass had not spread beyond its borders?

4. Is the court permitted to ask such a question?

Problem 9-13: Monopolies and Economists

The United States government has filed an antitrust suit against Microsoft. As part of the government's case, it must prove that Microsoft effectively

monopolized the market for computer operating systems. The government called to the stand Dr. Peter Kostick, a leading economist, who opined that Microsoft had indeed monopolized the noted market. That opinion was partly based on the report of an independent consumer rights organization, which had placed undercover "moles" in the employ of Microsoft. The report declared that "Microsoft controls 90% of the operating system market and sets unduly low prices, at a severe financial loss, where necessary to drive competitors out of business."

Can the economist testify if the report statement is inadmissible hearsay? If yes, can he reveal the content of the report to the jury?

[3] "Or Otherwise"

Rule 702 includes this phrase: "may testify thereto in the form of an opinion or otherwise." The "or otherwise" language is meant to permit expert witnesses to recount information clearly within the scope of their expertise but merely as background, without offering any opinion about any aspect of the case before the court. The jury then is free to apply that background to the facts of the specific case. The original Advisory Committee Note explains:

> Most of the literature assumes that experts testify only in the form of opinions. The assumption is logically unfounded. The rule accordingly recognizes that an expert on the stand may give a dissertation or exposition of scientific or other principles relevant to the case, leaving the trier of fact to apply them to the facts. Since much of the criticism of expert testimony has centered upon the hypothetical question, it seems wise to recognize that opinions are not indispensable and to encourage the use of expert testimony in nonopinion form when counsel believes the trier can itself draw the requisite inference. The use of opinions is not abolished by the rule, however. It will continue to be permissible for the expert to take the further step of suggesting the inference which should be drawn from applying the specialized knowledge to the facts.

Example

Problem 9-7 involved an expert psychologist testifying that a victim witness' identification of the defendant as the victim's assailant was suspect. But under Rule 702, the expert need not go that far. She could simply explain the circumstances under which witness identifications are and are not reliable, leaving it to the jury to apply those principles to decide whether the identification in the case before them was reliable.

The Advisory Committee Note to Rule 702 gives further guidance for assessing the value of such "generalized testimony." For such testimony, the rule requires that: "(1) the expert be qualified; (2) the testimony address a subject

matter on which the factfinder can be assisted by an expert; (3) the testimony be reliable; and (4) the testimony 'fit' the facts of the case."

To recap: An expert can thus testify in at least three capacities:

1. *As an observer*, akin to an ordinary lay witness describing perceived events. E. g., "The wound was red, oozing a slimy green substance," or, using some expertise in the description, "The wound was red, oozing a slimy green pus."

2. *As an opinion-articulator* about the facts of the specific case. E.g. "This defendant suffers from paranoid schizophrenia."

3. *As an "or otherwise" testifier*, educating the jury about background principles helpful in understanding a particular case but not including an opinion about the specific case. E.g., "Paranoid schizophrenics are often so out of touch with reality that they often lose much of the ability to tell right from wrong," offering no opinion about whether this defendant — who happens to a paranoid schizophrenic — can tell right from wrong.

Problem 9-14: The Radiologist and Psychologist Meet

1. In Problem 9-12, in which capacity would the expert testify if permitted to respond to the various questions posed? Why?

2. In problem 9-11, what sorts of questions should be asked of the psychiatrist, Dr. P, to avoid his giving an "opinion," thus limiting him instead to "or otherwise" background?

[4] The Ultimate Issue Rule

Traditionally, evidence law prohibited any witness, lay or expert, from offering an opinion on the "ultimate issue" in the case.

Example

A car owner brings a negligence action against a mechanic, alleging that faulty repair of the car's brakes caused an accident in which the car owner was severely injured. The plaintiff calls an expert mechanic to the stand. The following exchange occurs after the mechanic testifies that he examined the following: (1) the automobile brakes, (2) the extent of the damage to the car, (3) the police reports, and (4) the depositions of the plaintiff and the defendant.

PLAINTIFF'S ATTORNEY: Do you have an opinion to a reasonable degree of professional certainty whether defendant Joseph Roscoe negligently repaired the brakes on plaintiff John Roten's car?

A: Yes, I do.

PLAINTIFF'S ATTORNEY: What is that opinion?

DEFENDANT'S ATTORNEY: Objection, calls for an opinion on an ultimate issue.

JUDGE: Objection sustained.

The reason given for the ultimate issue bar was that opinion testimony about an ultimate issue "usurps the function" or "invades the province" of the

jury. These vague phrases express the concern that jurors will too readily defer to an expert's views on the ultimate question. But the rule proved problematic for three reasons:

1. It often made it unreasonably difficult for advocates to present their cases, forcing the witnesses into verbal contortions to avoid the disfavored magic phrasing.

2. Doubts grew about the ultimate issue rule's assumption that juries would be so gullible and irresponsible as to ignore weighing the reasons for an expert's opinion.

3. It was often difficult to distinguish "ultimate" from "non-ultimate" issues. The above example is clear. But what if the expert mechanic had instead been asked, "Did the defendant fail to exercise the same sort of care as other mechanics ordinarily do in repairing brakes?" Or instead: "What procedures do mechanics customarily follow in brake repairs of this kind?" "Why do they do so?" "Did the defendant fail in any way to follow such procedures?" "How?" "What impact did this have on the brakes' safety?" The sometimes substantial differences in the phrasing of these questions show that it can be hard to draw a line between "ultimate" and "penultimate" issues. Even this latter set of questions, which seems to be on the "right" side of the line, raise another question: "Do these questions really accomplish the task of fairly conveying the necessary information better than do the other options, combined with their own follow up questions?"

For similar reasons, a majority of jurisdictions have abandoned the ultimate issue rule. The Federal Rules of Evidence followed suit for most kinds of cases in Rule 704(a):

> Except as provided in subdivision (b), testimony in the form of opinion or inference otherwise admissible is not objectionable because it embraces an ultimate issue to be decided by the trier of fact.

The abolition of the ultimate issue rule does not mean that opinions on ultimate issues are always permitted. Rules 701 and 702 respectively require that opinions be helpful to the trier of fact. Rule 403 similarly gives the trial court discretion to exclude unfairly prejudicial or time-wasting opinions. The Advisory Committee Note to Rule 704 offers clarification:

> These provisions [Rules 403, 701, and 702] afford ample assurances against the admission of opinions which would merely tell the jury what result to reach, somewhat in the manner of the oath-helpers of an earlier day. They also stand ready to exclude opinions phrased in terms of inadequately explored legal criteria. Thus the question, "Did T have capacity to make a will?" would be excluded, while the question, "Did T have sufficient mental capacity to know the nature and extent of his property and the natural objects of his bounty and to formulate a rational scheme of distribution [the legal test for testamentary capacity]?" would be allowed.

Congress added Rule 704(b) in 1984 to re-institute the ultimate issue rule for one class of cases:

> No expert witness testifying with respect to the mental state or condition of a defendant in a criminal case may state an opinion or inference as to whether the defendant did or did not have the mental state or condition constituting an element of the crime charged or a defense thereto. Such ultimate issues are matters for the trier of fact alone.

The Senate Judiciary Committee Report concerning the amendment cites with approval an American Psychiatric Association statement as expressing the Rule's intentions:

> Psychiatrists, of course, must be permitted to testify fully about the defendant's diagnosis, mental state and motivation (in clinical and common sense terms) at the time of the alleged act so as to permit the jury or judge to reach the ultimate conclusion about which they and only they are expert.

Despite this guidance, Rule 704(b) reintroduces all the same uncertainties that have always accompanied the ultimate issue rule. For example, the Committee Report declares that a psychiatrist would be permitted to testify that a patient suffered from a "mental disease or defect." Yet whether a patient suffered from a mental disease or defect is an element of the insanity defense and thus presumably logically involves an "ultimate issue." On the other hand, many commentators agree that Rule 704(b)'s ultimate issue rule would bar an opinion that a defendant could not appreciate the distinction between right and wrong, which is another element of the insanity defense. The most plausible way to distinguish these facially similar situations is to view the underlying policy concern as limiting experts to opinions on subjects that they commonly address in their fields and disallowing opinions about standards that the legal system creates. The term "mental disease or defect" is arguably close enough to the sorts of medical terminology used by psychiatrists every day (though even this point is debatable) so that the legal standard and professional terminology overlap. Consequently, no "ultimate issue" is involved. But whether a patient can appreciate the distinction between right and wrong seems farther afield from traditional psychiatric terms, and it involves moral judgments better made by a jury than an expert. This distinction is one of degree more than a dichotomy-that is, the term "mental disease or defect" may also involve moral judgments, but to a lesser degree than determining someone's ability to tell right from wrong. The distinction thus, again without providing bright lines, may nevertheless be helpful in resolving close cases.

Problem 9-15: Gullibility Revisited

Review Prohlem 9-11 concerning Ms. B's alleged gullibility. *Would the expert's opining that Ms. B was "unusually gullible" be objectionable under Rule 704? What if the expert were instead asked: "In your opinion, did Ms. B know that the checks that she cashed were stolen?" What if she were asked, "In your opinion, was Ms. B capable of knowing that the checks were stolen?" Finally, what if he were asked to (a) describe the indicators of an unusually*

gullible personality and (b) opine on whether Ms. B displayed any or all of those indicators, identifying which ones he found to be present?

Problem 9-16: The Insanity Defense Revisited

Assume the facts of Problem 9-5. *At trial, an expert psychiatrist is called to the stand and asked, "Was Mr. Yerguson incapable, because of a mental disease or defect, of telling right from wrong?" Which of the following possibilities best characterizes this question?*

1. Objectionable under both traditional law and Rule 704.

2. Unobjectionable under Rule 704, which permits inquiries into ultimate issues.

3. Unobjectionable under either traditional law or Rule 704, because no ultimate issue is involved.

4. A debatably close one concerning whether it deals with an ultimate issue and is therefore objectionable.

Would your answer change if the psychiatrist were instead asked: "What is your diagnosis concerning whether Mr. Yerguson suffered from any mental abnormality at the time of the crime"? Why?

[5] Reasonable Degree of Professional Certainty

Some jurisdictions insist that experts may testify only if they describe their opinions as "reasonably certain" or, in other jurisdictions, as "reasonably probable." The idea is that they must have formed their opinions to "a reasonable medical or scientific certainty." Other jurisdictions abandon these formalities, and require simply that an opinion be helpful to the factfinder. This latter approach is shared by the Federal Rules of Evidence. Under this approach, there is thus no categorical rule prohibiting opinions stated to be "mere possibilities." However, such opinions might be vulnerable to attack under Rule 702 as unlikely to assist the trier of fact or under Rule 403 as more prejudicial than probative.

[6] The Opinion Rule and Out-of-Court Statements

We will examine hearsay in Chapters 10 though 15. But it is worth alerting you here to another problem at the intersection of the rules on hearsay and expert testimony: Assume that a hearsay document is admitted, for example, under the business records exception to the hearsay rule. If the document contains opinions, including expert ones, must the opinion be admitted only if it complies with the opinion rules, like Rules 701 through 705, that would apply were a live witness to state the opinion on the stand? Many courts say "yes," although common sense suggests that the rules should be more liberally applied in the hearsay setting.

Example 1

A report written by an infectious disease specialist, after describing the patient's symptoms, says: "Diagnosis: Patient suffers from cellulitis [fat cell

infections], probably caused by brown recluse spider bite. The infections have spread significantly, due to the late start of treatment." The report is offered into evidence by the plaintiff at a medical malpractice trial charging the plaintiff's family doctor with recommending hospitalization at a later point than sound professional judgment required.

The report is hearsay — an out-of-court statement offered for the truth of what it asserts. But the report probably fits within the business records exception to the hearsay rule. However, the report contains opinions, and many courts would read the business records exception as including opinions only if the requirements of Rules 701 through 705 are met. Because this opinion is offered by a highly qualified infectious disease specialist, it may be relatively easy for most or all of the excerpted statements to fulfill the opinion rules. But had those statements instead been made by the emergency room technician (who knows far less about infectious diseases than does the specialist), the admissibility of some or all of the stated opinions would be in much greater doubt.

Furthermore, the opinion rule has long been held not to apply to statements admitted under the exclusion or exception to the hearsay rule for party admissions. The rationale for this exclusion partly involves adversarial rather than reliability concerns. In other words, parties should fairly expect to be bound by their own words when they bring or defend a law suit (see Chapter 13 for details). Moreover, parties are likely to have both the incentive and the resources to challenge any misleading or false statements purportedly their own. This rationale applies to opinions as much as to "facts."

Example 2

Plaintiff sued Ford Motor Company for personal injuries after his Ford Pinto exploded into flames when hit from behind at 5 m.p.h. The plaintiff seeks to admit into evidence this portion of a memorandum written by Ford's Chief Automotive Engineer within the scope of his employment: "The Pinto gas tank is poorly placed and may too easily spark fires in low impact collisions. Production should be postponed to address this problem." Is it admissible?

The quoted statement is offered by the plaintiff for the truth of what it asserts and is thus hearsay. However, the statement arguably fits within the party admissions exemption from the hearsay rule. Moreover (unlike the approach of many courts to the business records exception), the party admissions exemption overcomes both hearsay and opinion rule objections. Thus, no independent showing need be made that the opinion meets the requirements of Rules 701 through 705.

Broadening the opinion rule exception to documents other than those containing admissions is a trend apparently now under way in many jurisdictions. If the opinion rule is modernly thought of as a preference, where possible, for specific over general testimony, this makes sense. When documents contain otherwise admissible hearsay, the documents cannot be

"prompted" in the way that a live witness could to rephrase an opinion in more specific terms.

[C] Cross-Examination: Scope and Manner

Many of the restrictions on the direct examination of experts do not apply on cross-examination. Thus, even under traditional rules, hypothetical questions are generally not required, since the cross-examiner's function is typically to challenge, rather than to elicit, an opinion. For similar reasons, traditional rules requiring bases to be revealed before opinions are elicited and requiring other admitted or admissible evidence being available to support those bases are of no concern.

Under Rule 705, if an expert has not revealed any or all the facts, data, and opinions underlying his in-court opinion, the opponent may elicit those matters on cross-examination. Available methods for impeaching the expert include the following:

- Exploring how the non-existence of any particular basis on which the expert relied would alter his or her opinion.
- Exploring how the existence of contrary or additional bases (presumably to be supported by evidence from the cross-examiner at a later stage) would alter the expert's opinion.
- Determining which materials the expert reviewed or failed to review in preparing to offer the opinion.
- Determining which tests or other investigations the expert conducted (or failed to conduct) and how they were done.
- Exploring the financial compensation received by the expert for the advice and testimony.
- Revealing contradictions between the expert's assertions and those made by other experts in published works, provided those works comply with the learned treatise exception to the hearsay rule, Rule 803(18).
- Posing a hypothetical question based upon an alternative set of assumptions.
- Exploring what prior expert testimony the expert has given, for whom, and its content.

*Practice Tip: Retaining Qualified Forensic Experts.*Litigators have a variety of methods of locating properly-qualified forensic experts. Many litigators are themselves specialists in the fields in which they litigate and may personally know other experts who offer forensic services. Even if they are not themselves specialists in a field, many litigators limit their practices to particular types of litigation and so become familiar with numerous experts. Litigators may belong to professional lwyer groups whose members provide referrals to effective experts. And the Internet, that ubiquitous source of information, is also a ready source of experts. For example, a search for "expert witnesses" will produce scads of websites listing forensic experts by specialty who are available for hire. Thus, when preparing this edition the authors visited the website http://expertpages.com/experts/accidentreconstruction.htm and found

lists of accident reconstruction experts listed by state (province in Canada) and sub-specialty. One expert's listing included the following information: "45 years experience in construction & safety; 160+ trials; Time = 50% Expert & 50% practicing. 50%/50% — Plaintiff & Defense." *Assuming the expert is otherwise qualified, how would this information help you decide whether to retain this particular expert?*

Problem 9-17: My Cousin Vinnie Cross-Examined

Assume the facts in the My Cousin Vinnie case, Problem 8-2, and draft a set of cross-examination questions for the expert.

Problem 9-18: Or Was It the Accurate Eyewitness?

Assume the facts in Problem 9-7 and draft a set of cross-examination questions for the expert psychologist.

Problem 9-19: Trial Transcript Exercise on the Scope and Manner of Examining Experts

The Federal Military Institute ("FMI") is an all-male, government-funded school for training "citizen-soldiers." This school uses the "adversative method" of training. In this method, upperclassmen bully, abuse, taunt, physically challenge, and otherwise harass freshmen "grunts," who are expected not to resist. The method is thought to build physical and emotional strength, discipline, teamwork, subordination of individual ego to the greater good, obedience, acceptance of hierarchy, and adaptability.

Several women have brought a civil lawsuit challenging the male-only admissions policy of FMI. FMI's response was to create a small all-female school, the Federal Women's Military Institute ("FWMI") as an alternative. That school does not use the adversative method, on the theory that women better learn leadership in a more nurturing environment. FMI calls feminist historian Barbara Randall to the stand. Excerpts from her direct examination follow:

DEFENDANT'S ATTORNEY: Dr. Randall, what is your educational background?

A: I received my Ph.D in history from Yale University in 1979, specializing in Twentieth-Century women's history. I did post-graduate work at Princeton's Women's Studies Programs.

DEFENDANT'S ATTORNEY: And where are you now employed?

A: I am a Full Professor holding the Elizabeth Shelbourne Chair in Women's History in the History Department of Harvard University, a post I have held since completing my post-graduate work. I also simultaneously hold a post as a tenured professor in Harvard's Women's Studies Program.

DEFENDANT'S ATTORNEY: What is your area of research specialization?

A: I study gendered differences in the ways that women and men learn in many settings. Twentieth-century history is replete with examples of both mythological and of real such differences.

DEFENDANT'S ATTORNEY: Do you rely entirely on historical research in your work?

A: I read widely in many disciplines — social science, philosophy, politics, literary criticism, feminist studies, all of which inform my work.

DEFENDANT'S ATTORNEY: Dr. Randall, are you familiar with FMI and FWMI?

A: Yes. I have extensively studied both institutions. I have interviewed all current students, faculty, and administrators at both schools, as well as sitting in classes and reviewing their curricula.

DEFENDANT'S ATTORNEY: Have you formed any opinion about whether FMI would be an institutionally effective institute for training women as citizen-soldiers?

A: Yes.

DEFENDANT'S ATTORNEY: What is that opinion?

A: FMI would be a terrible place to educate women to be any sort of soldier or leader. Few women, if any, could thrive there, and even those who might succeed would very likely do better elsewhere.

DEFENDANT'S ATTORNEY: Why is that?

A: Because women do not learn well in an adversative model.

DEFENDANT'S ATTORNEY: And do you have an opinion about whether FWMI would be more effective than FMI at training citizen-soldiers?

A: Yes.

DEFENDANT'S ATTORNEY: What is that opinion?

A: FWMI is very effective in an absolute sense, and far more effective certainly than FMI, in training women as citizen-soldiers.

DEFENDANT'S ATTORNEY: Why is that?

A. The overwhelming scholarly evidence from history and in all fields of gender studies is that, by college, young women have far less confidence in themselves than do young men. They need a chance to see females succeeding in leadership roles and to take those roles themselves to restore self-confidence. Moreover, women learn and develop best in close relationships with other women. A caring, nurturing environment — support from fellow students, from teachers, from teammates — gives them the strength and skill to be tough with opponents and to learn more effectively. FWMI provides exactly this sort of environment for young women.

DEFENDANT'S ATTORNEY: What is your opinion, if any, on whether FMI discriminates against women by FMI's males-only admissions policy.

A: FMI does not so discriminate. It does treat men and women differently, but not all differences in treatment are discriminatory. These differences are in fact necessary to equality. FMI sends the applications of all women whom FMI rejects to FWMI so that women learn to be peer soldiers with the male graduates of FMI. And, correspondingly, it is only at FMI that men learn to be the best soldiers they can be. These separate institutions are the only way to have male-female equality in the military.

DEFENDANT'S ATTORNEY: On what do you base the opinions that you have shared with us today, Dr. Randall?

A: On my observations at both institutions and my knowledge of history from my own research and on my wide multi-disciplinary reading in feminist studies.

DEFENDANT'S ATTORNEY: No more questions, Thank you.

If this testimony were presented before the jury, should objections have been made at any point by the plaintiffs' counsel to any of the questions? Why? What would be the basis for such objections? How likely would the objections be to succeed? If this testimony were instead an offer of proof before the trial judge, would you permit this expert to testify before the jury? Why or why not? Consider all the bases for objection thus far reviewed in this chapter.

Another impeachment technique is to cross-examine the expert with a learned treatise whose position contradicts that of the expert on the stand. At common law, cross-examination by learned treatises was permissible only to impeach the witness, e.g., by showing the witness' unfamiliarity with a respected work or by implying the weakness of the witness' opinion because it was contrary to such a well-respected piece of scholarship. But the treatise could not be used as substantive evidence, that is, as proof of the truth of what the treatise asserts. The common law feared that substantive use of learned treatises would confuse the jury with technical information and statements taken out of context or that statements from treatises would be unreliable because of the rapid change in the state of scientific knowledge.

The Federal Rules of Evidence reject this approach. Instead, they created a new hearsay exception for learned treatises under these circumstances. Under Rule 803(18), the following statements are not excluded by the hearsay rule:

> **Learned Treatises.** To the extent called to the attention of an expert witness upon cross-examination or relied upon by the expert witness in direct examination, statements contained in published treatises, periodicals, or pamphlets on a subject of history, medicine, or other science or art, established as a reliable authority by the testimony or admission of the witness or by other expert testimony or by judicial notice. If admitted, the statements may be read into evidence but may not be received as exhibits.

The drafters of Rule 803(18) believed that the requirement that the expert must be questioned about the treatise would help prevent jurors from misunderstanding or misapplying statements from a treatise. On the other hand, the expert being challenged cannot simply block questioning by denying the authoritative nature of the treatise. Another expert or, in appropriate cases, judicial notice, may establish that the treatise has the necessary authority. Authors of treatises and other scholarly works (any scholarly work will do)

have an incentive to produce reliable work to avoid criticism by professional peers so, without the hearsay exception, the jury might be deprived of valuable information. But a restriction is still imposed on "receiving" the treatise as an exhibit, that is, it may not be taken into the jury room because of the residual fear that the jury may there misapply the treatise without the expert's guidance.

Problem 9-20: Black Rage

Dr. John LeFlew is a defense expert in a homicide trial in which the defendant claims imperfect self-defense as a ground for mitigating his crime from murder to manslaughter. LeFlew testifies on direct examination that the defendant suffers from "black rage syndrome," a psychological disorder that results in an intense fear of white males by some African-Americans, and the defendant's victim was indeed a white male. Cross-examination of Dr. LeFlew by the prosecution proceeded as follows:

PROSECUTOR: Dr. LeFlew, you are of course familiar with Mellon Dondakait's book, Black Rage: A Non-Existent Malady, published in 1996?

A: Yes, I am familiar with it.

PROSECUTOR: And it is widely recognized among the professional psychological community as the leading, authoritative work on whether "black rage syndrome" is a valid concept, that is, in laymen's terms, on whether such a syndrome in fact exists?

A: I do not so consider it. I think it is a flawed work based on weak research.

PROSECUTOR: That was not my question. My question was whether others in the professional psychological research community widely recognize it as authoritative?

DEFENSE COUNSEL: Objection. Asked and answered.

JUDGE: Overruled. You may answer the question, Dr. LeFlew.

A: Yes, a majority of the research community so recognize it.

PROSECUTOR: I ask that this book, Black Rage: A Non-Existent Malady, be marked, for purposes of identification only, as P-24. Dr., have you read this book, marked as Exhibit P-24?

A: Yes, I have.

PROSECUTOR: I direct your attention to page 207. Doesn't the book there state that . . .

DEFENSE COUNSEL: Objection! Your Honor, this is hearsay, and Dr. LeFlew does not recognize this book as a learned treatise.

JUDGE: Overruled. Please finish your question, Mr. Prosecutor.

PROSECUTOR: Dr. LeFlew, doesn't this book state at page 207 the following: "In sum, there is simply no scientifically trustworthy evidence to support the existence of the so-called 'black rage syndrome'? "

A: Yes, it does so state that.

DEFENSE COUNSEL: Objection, Your Honor! No foundation has been established for the learned treatise exception.

JUDGE: P-24 is admitted as an exhibit.

Which, if any, of the trial judge's three rulings are correct, and which not? Why? What additional grounds for objection, if any, should defense counsel have raised to maximize the chance of altering the judge's third ruling? Why?

§ 9.05 THE MAJOR PREMISES: RELEVANCE AND RELIABILITY OF GENERAL PRINCIPLES AND METHODS

[A] Defining Terms

It is helpful, in understanding how courts treat the admissibility of testimony concerning the major premises of the expert witness syllogism, to distinguish "principles" from "methods." The distinction is important because it is often made in case law, scholarly commentary, and codified evidence rules. Nevertheless, rarely do courts, advisory committees, or legislatures clearly define the terms. Moreover, different cases or code commentaries may suggest different meanings. Yet authorities are increasingly fond of saying that expert testimony must be the product of both reliable "principles" and "methods." One by-no-means sharp, but still helpful, definition of these terms may be to say that they refer to differing levels of generality, but both are still best thought of as major premises in the expert syllogism. The "principle" is the most general statement, the "method" somewhat less general, but both are still broad assertions not yet applied to the facts of the specific case. Often "method" is seen as a means for applying a "principle" to a specific case. Using alternative terminology, a "method" is a *technique* for applying principles in specific instances. Therefore, if either the principle or the method is flawed, even their perfect application to a particular situation cannot be said to reach a trustworthy result. For example, two "principles" may be that DNA exists and is unique for each person, and a "method" may be that DNA testing can accurately identify each person's unique DNA. The Advisory Committee Note to the amendments to Rule 702 (those amendments are recited earlier in this chapter) offered this example:

> When a law enforcement agent testifies regarding the use of code words in a drug transaction, the principle used by the agent is that participants in such transactions regularly use code words to conceal the nature of their activities. The method used by the agent is the application of extensive experience to analyze the meaning of the conversations.

If it is untrue that participants in drug transactions regularly use code words, then testimony that a particular suspect was using "common" drug dealer code words is unhelpful. Similarly, the helpfulness of the agent's expert testimony is suspect if the principle of the use of code words is true but it has not been shown that drug agents are generally capable of identifying when code words are being used and what they mean. Even if we rephrase this last point to say that we need only show that *this agent* can reliably interpret drug

dealer code, we again must be confident that the agent can generally do so before we will allow him or her to interpret a particular suspect's conversation as containing such code.

While principles and methods can, therefore, be distinguished, they are also related. Thus drug agents may base the principle that drug dealers regularly use code on their repeated experiences of hearing and identifying them doing so. Similarly, while the existence of DNA may be proposed as a theory, empirical support for the theory's accuracy may be derived from repeated experimental identification of DNA via DNA testing. Nevertheless, to say that the two concepts of "principles" and "methods" are related does not mean that the distinction is useless.

Example

Dr. Eugene Smart, a psychologist, testifies that there is a dramatically increased likelihood of recidivism by a violent criminal offender if certain factors are present. He further testifies that he is effective at identifying, from a clinical interview with a patient, whether those factors are present in that patient's case. The expert's ultimate goal is to testify that Joey Small, who was recently convicted of first-degree murder, displays the necessary traits and is thus likely to re-offend. His testimony is relevant to issues being considered by a jury in determining whether to recommend the death penalty.

Comment: Even if Dr. Smart is right that the presence of the specified factors leads to an increased probability of future violence, it does not necessarily follow that he can generally determine their presence in individual patients based solely upon a clinical interview. It may be the case, for example, that a combination of written psychological tests, interviews with family members and friends, and extended observation of the patient's behavior by a team of properly trained psychologists who reach consensus are necessary accurately to identify the presence of the relevant factors, and that a simple clinical interview is insufficient. Absent proof by the proponent of the trustworthiness of Dr. Smart's method for *applying* the general principle of violence-identifying-factors to individual suspects, Smart's testimony should, upon objection, be excluded.

One of the Advisory Committee Notes to Rule 702 also addresses the requirement that "the testimony is based upon sufficient facts or data." The Note initially declares that this requirement "calls for a quantitative rather than a qualitative analysis." But the Note does not define "facts" or "data" other than to say that the "term 'data' is intended to encompass the *reliable* opinions of other experts." (emphasis added) The Note's point might be that the way in which either a "principle" or a "method" is derived must be trustworthy. For a magician to say that he had a dream that something called DNA (which he describes) exists and is unique for each human being (other than identical twins) would not be a sufficient "datum" upon which an expert can base an opinion. But reliance on careful, repeated laboratory studies on

the same question by well-respected chemists and biologists using sound scientific procedures would be sufficient. This interpretation is further supported by the Note's declaration that "an analysis of the sufficiency of the expert's basis cannot be divorced from the ultimate reliability of the expert's opinion."

This example reveals the slipperiness of terminology. What we think of as the "scientific *method*" seems to be one sort of reliable set of "facts or data" within the meaning of the Advisory Committee's terminology. For example, the failure of repeated experiments to disprove the hypothesis that a certain vaccine wards off the flu may be given great weight if the experiments were well-designed, including adequate controls ruling out other factors (e.g., the content of clear drinking water was the same for all subjects, thus ruling out the influence of contaminants). When the Advisory Committee refers to a "method," however, it is apparently referring to the means for applying a principle to a specific case rather than to the soundness of the procedures for deriving the principle in the first place. Scientists and many legal commentators, as well as many laymen, may thus find the Advisory Committee's terminology confusing. Furthermore, the Committee's use of "facts or data" can alternatively be read to refer to case-specific bases — minor premises, instead of the procedures for deriving major premises — as some commentators urge. Or, still other commentators suggest, "facts" may refer to case-specific bases and "data" to the soundness of procedures for deriving principles. Complete agreement on terminology among all interested persons is unlikely, and it is the distinctions underlying the terms — and whether those distinctions are useful (which we and the Advisory Committee believe they are) — that matters most, even if we may disagree about which word best labels which concept.

Problem 9-21: Principled Methods

In the problems listed below, identify the major and minor premises. Then, for each of the problems, identify the "principles and methods"/techniques involved in the major premises and the "facts or data" supporting the bases for all the listed premises.

1. Problem 9-1.
2. Problem 9-2.
3. Problem 9-7.
4. Problem 9-8.
5. Problem 9-9.
6. Prohlem 9-10.

Vinny Gambini (Joe Pesci) displays an unusual method of concluding the testimony of expert witness Mona Lisa Vito (Marisa Tomei) in front of a surprised Judge Haller (Fred Gwynne) in *My Cousin Vinny*. *

[B] Scientific Evidence

[1] The *Frye* Test

[a] The Test Stated

Many courts had long carved out for special treatment one sort of expert testimony: that concerning "novel" "scientific" evidence. The reasons for requiring additional admissibility tests, or more stringent application of existing admissibility tests, to scientific evidence have not always been made clear in the cases. Clarification of that justification was thus often made in the first instance by commentators. Furthermore, the courts generally provided little guidance for distinguishing "scientific" from "non-scientific" evidence. The distinction was not one founded in the philosophy of science or the experience of scientists themselves. Rather, the courts seemed, sometimes implicitly, sometimes explicitly, to deem "scientific" any evidence for which the justifications for special admissibility hurdles applied.

Among the justifications for these special hurdles were that: (1) an "aura of infallibility" surrounded the evidence so that a jury was unlikely independently to evaluate, or to be skeptical of, its worth; (2) scientific evidence relies on such arcane information that it will be very difficult for jurors to evaluate

its worth, even if they are not "overawed" by any view of science as infallible; therefore, jurors just won't try, it being easier simply to take the expert's word; (3) the evidence is so unfamiliar to the courts that judges will have difficulty guiding juries on how fairly to evaluate it; and (4) the evidence "invades the province of the jury" in a particularly powerful way, such as lie-detector test results determining for the jury who speaks "truth" and who does not.

Courts were particularly concerned about "novel" scientific evidence because it presented more of the above dangers to a greater degree than scientific evidence with a longer pedigree of testing in the courts. The classic test for the admissibility of novel scientific evidence was articulated in *Frye v. United States*, 293 F. 1013, 1014 (D.C. Cir. 1923), which barred the use of polygraph evidence:

> Just when a scientific principle or discovery crosses the line between the experimental or demonstrable stages is difficult to define. Somewhere in this twilight zone the evidential force of the principle must he recognized, and while courts will go a long way in admitting expert testimony deduced from a well-recognized scientific principle or discovery, the thing from which the deduction is made must be sufficiently established to have gained general acceptance in the particular field in which it belongs.

[b] Validity v. Reliability

The *Frye* test raised numerous questions. Notably, what precisely was the "thing" that had to be generally accepted? One influential answer to this question is that both the "validity" and "reliability" of a scientific principle must be shown by sound empirical data. "Validity," as used by a scientist, asks, "Is this test accurate; does it measure what it is supposed to measure?" "Reliability" asks, "Does this test consistently yield the same results upon repeated challenge?"

Example

An expert seeks to testify that: (1) cocaine has a unique scent; and (2) a new "sniffer" machine (such a machine is indeed being tested as we write this text) can detect that unique scent.

Comment: If there is indeed a unique scent for cocaine, a sniffer's reaction (say, by ringing a bell or flashing a red light) might validly detect what it purports to detect — cocaine. However, sometimes the sniffer might fail to react when cocaine scent is present, or might react when the scent is not present. If so, the sniffer test would not be "reliable" because it does not reach consistent results. Validity and reliability can, of course, be connected. Thus if a sniffer is unreliable, that is, highly inconsistent in when it reacts to cocaine, then it is hard to tell when its reaction is "valid," when the bells and lights indeed reflect what they purport to reflect: the presence of cocaine. On the other hand, a test can be "reliable" but invalid. If the sniffer consistently reacted when substance X, believed to be cocaine, was placed near the sniffer, it would be reliable. However, if substance X is in fact sugar, then the sniffer

is invalid; it does not measure what it purports to measure, the presence of cocaine.

[c] Defining the Relevant Field

Another problem with the *Frye* test was determining what was the relevant "scientific" field in which the technique must be accepted.

Example 1

An expert is called by the prosecution in a murder case to testify about his use of a "dog scent lineup" to identify the defendant as the killer. In a dog scent lineup, a dog sniffs an item taken from the offender, such as a hat dropped by a killer while fleeing. The dog sniffs the hat and then sniffs each of the six to eight persons placed in a line. If the pooch barks at number 7, that is the equivalent of the dog's saying, "Number 7's scent matches the scent on the hat." Such testimony would support the inference that number 7 is the killer.

Comment: Though not often recognized by the courts, several premises contribute to the value of this testimony. Its validity turns on proving that: (1) each human has a unique scent; (2) that scent remains on items of clothing for a significant period of time after they are worn; and (3) properly trained dogs can reliably match the unique scent on an item of clothing to its human source. Does the "relevant field" that must "generally accept" each of these propositions consist of biologists specializing in scenting, canine anatomy specialists, experimental dog psychologists, policemen trained in the use of dog scent identification techniques, the scientist who invented the dog scent lineup technique, or some combination of any or all these fields? This question highlights the difficulties in determining the relevant field. It also raises a qualifications question. Some courts would prohibit persons who made their living from inventing or applying a technique from testifying about its value or that of its underlying principles, on the theory that such persons are hopelessly biased.

Courts applying *Frye* also often reached inconsistent and seemingly random results as to what techniques were "novel" or not, "scientific" or not.

Example 2

Many courts began admitting evidence of battered woman's syndrome (a set of behaviors displayed by many women abused by their male spouses or lovers) to establish self-defense on the theory that such women see grave danger where others do not. The samples in the studies on which the syndrome was based consisted entirely of white heterosexual women. A defense attorney now offers battered women's syndrome evidence in support of an insanity defense raised by an African-American lesbian charged with killing her lover. The prosecution objects on the ground that the *Frye* test has not been met.

Comment: The defense might respond that battered women's syndrome evidence is not "novel," since its use has frequently been upheld by the courts. This argument is questionable, however, asserts the prosecutor, since the

concept of battered women's syndrome was developed using white heterosexual women as the sample. It may be that different behaviors would be seen in battered African-American women, or battered lesbians, or especially battered African-American lesbians, given these groups' different social circumstances. Some prosecutors have gone beyond this "external validity" argument (that you can't easily generalize from one set of conditions to a very different set) to make the racist and homophobic arguments that African-American and lesbian women are "too tough" to display the vulnerabilities of BWS "victims." The prosecutor might argue, on more solid ground, that while the existence of BWS might alter a woman's perception of danger (relevant to self-defense), that does not mean BWS is relevant to the defendant's ability to tell right from wrong or the other aspects of legal insanity.

Defense counsel might now, however, take another tack, arguing that a psychologist's testimony about BWS is not "scientific." Jurors are naturally skeptical about social science evidence, and it is relatively easy for them to understand, so no special admissibility hurdle is required. The prosecution's response would be to argue the contrary: that social science evidence is more complex than jurors realize, and precisely because jurors see it as easy to understand, they may miss many of its weaknesses and be too accepting of testimony consistent with the juror's own pre-existing prejudices and assumptions.

[d] Developmental Stages of Forensic Evidence

Among the supposed advantages of *Frye* was its ease of application, at least in the sense that it purportedly freed trial judges from the difficult task of understanding and evaluating scientific evidence. The judge's job would simply be to "count noses" to ensure general acceptance in the relevant field (how many noses constitute "general" acceptance is, of course, another question *Frye* did not answer). But in practice, careful judges had to determine what the relevant field was, whether "validity" and "reliability" were both generally accepted, and who was properly qualified to testify about general acceptance. All of these matters required the trial court to learn a good deal of the science.

Professor Andre Moenssens helped trial courts to determine whether "general acceptance" has been achieved concerning particular scientific evidence by offering the following description of the stages in the development of forensic science:

Stage 1: A theory is postulated.

Stage 2: Experiments are designed to verify the validity of the theory.

Stage 3: If the theory's validity is not disproved after a searching inquiry and empirical testing, it is "proven" valid and a court then appropriately may take judicial notice of the theory. This result is unlikely to occur at this stage, however, because no vehicle exists for translating the theory into relevant evidence in a law suit.

Stage 4: A technique is devised, or an instrument is designed and built, that will permit the theory to be applied practically in a forensic setting.

Stage 5: After a methodology has been devised, further tests must demonstrate a positive correlation between the results and the underlying theory. This stage is necessary to prove that the effects observed are not the result of some unidentified cause.

Stage 6: After the test has been shown to yield reliable results that are relevant to disputed issues in a law suit, a court may admit these results properly into evidence, and a qualified expert may interpret the results before the jury.

Moenssens' six stages, while helpful in guiding judges, underscore the inability of judges under *Frye* to escape careful study of the underlying science. Courts' involvement in such science led many to doubt not only *Frye's* supposed simplicity but also its wisdom: why exclude a technique that may in fact be trustworthy simply because, due to its very newness, it was not yet generally accepted? On the other hand, growing fears of "junk science" led others to ask, "why admit weak science just because it is foolishly accepted among some professional groups?" The growing chorus of criticism led to experimentation with a variety of options, ultimately leading to the growing dominance of a new test, articulated by the Supreme Court in *Daubert v. Merrill Dow Pharmeceuticals*, which will be discussed shortly. But *Frye* continues to be the test in many states, and the *Frye* "test" now survives as one factor to be weighed among many others under *Daubert*, so mastering the ambiguities of *Frye* remains important.

Problem 9-22: The Battered Child

Sixteen-year-old Johnny Appletree and his seven-year-old sister, Kristen, had endured years of physical and psychological brutality at their mother's hands, largely occurring, and being at its worst, when the mother was drunk. One day, Johnny, the soon-to-be-defendant on a murder charge, sensed trouble brewing and tried to arrange for him and his little sister to be any place but home that night. He failed. Fearing what might happen, he took all his savings and purchased a bow and arrow, which he hid under his mattress. He locked his door and had his sister sleep with him that night. Suddenly, his mom, in a rage, started beating on the door of his room. She kept up the pounding for hours and threatened repeatedly to beat him silly. Finally, the pounding stopped. Johnny gingerly opened the door and saw his mother on the floor asleep and snoring, a bottle of vodka in her hands. He pushed her over with his foot, but she did not wake. He then got his bow and arrow, and shot her in the heart and eyes with many arrows, until she lay dead.

At his trial, Johnny's lawyer sought to prove self-defense. To this end, counsel offered expert evidence about battered child syndrome, which consists of two major symptoms: hypervigilance ("being acutely aware of his or her environment and remaining always on alert for any signs of danger, events to which the unabused child might not attend") and learned helplessness ("believing that no one can help them and there is no means of escape, though nonabused children might see such means"). At a motion in limine outside the hearing of the jury, the prosecutor cross-examines the defense psychologist, Martin Rosenkranz, as follows:

PROSECUTOR: Dr. Rosenkranz, you say your theory of hypervigilance is based on just two case studies?

A: Yes.

PROSECUTOR: In the first of these, Drs. Martin and Beezley observed 50 children, ranging in age from 2–13 years, correct?

A: Yes.

PROSECUTOR: And all 50 children were in psychiatric confinement because of severe behavioral problems — problems of long standing that extended to teachers, classmates, and many sorts of relationships other than just the parent-child relationship?

A: Yes.

PROSECUTOR: You and a colleague of yours conducted the second study, which observed mother and child interactions, correct?

A: Yes.

PROSECUTOR: In neither study was there a control group — that is, a group of non-abused children observed to watch for the same sorts of behaviors?

A: Correct.

PROSECUTOR: And the populations involved in both studies consisted entirely of white children, of European ancestry, from low-income families?

A: Yes.

PROSECUTOR: The defendant and his mother were Asian-American, correct?

A: Yes.

PROSECUTOR: And they were quite well off financially?

A: Yes.

PROSECUTOR: Paper-and-pencil psychological tests of personality traits have never been done regarding the claim of hypervigilance?

A: That's right.

PROSECUTOR: Nor have any methods of investigation been done other than clinical studies?

A: That's right.

PROSECUTOR: And you lecture widely on the "battered child syndrome" and the role of hypervigilance?

A: Yes.

PROSECUTOR: And you are paid substantial fees for these lectures?

A: Yes.

PROSECUTOR: As for the role of learned helplessness, all the studies done have simply found a high rate of severe depression among abused children but have never separately studied directly whether such children feel "helpless" when non-abused children would not?

A: Right again.

PROSECUTOR: Indeed, you simply assume that a sense of helplessness is a corollary of depression?

A: A methodologically correct assumption, but you are right.

PROSECUTOR: Your Honor, I renew my objection that this testimony concerns a novel scientific technique not generally accepted in the relevant scientific community under our state's version of the *Frye* test.

DEFENSE COUNSEL: Your Honor, may I ask just a few questions on redirect before you rule?

JUDGE: You may.

DEFENSE COUNSEL: The Battered Women's Syndrome has long been widely accepted among the academic psychological research community as valid and as reliably applied?

A: Yes.

DEFENSE COUNSEL: And you see the research in the area of the battered child syndrome as merely an extension, another manifestation, if you will, of BWS to battered children?

A: Of course.

DEFENSE COUNSEL: Hypervigilance is also one of the possible, albeit not necessary, symptoms of Post Traumatic Stress Disorder, PTSD, is it not?

A: Yes.

DEFENSE COUNSEL: And PTSD is recognized as an official diagnosis in the Diagnostic and Statistical Manual — the latest version — which all mental health workers use in making diagnoses?

A: Yes.

DEFENSE COUNSEL: And you consider battered child syndrome to be a specialized form of PTSD?

A: Yes.

DEFENSE COUNSEL: There is also a National Association of Battered Child Syndrome Researchers?

A: Yes.

DEFENSE COUNSEL: This association has over 100 members, all of whom are leaders in the field of child psychology research?

A: Yes.

DEFENSE COUNSEL: And you have been President of that association since its founding six years ago?

A: Yes.

DEFENSE COUNSEL: Has any member of that association ever written an article or given a speech of which you are aware challenging your findings?

A: No.

DEFENSE COUNSEL: And all your research on battered child-syndrome has been published in prestigious psychological research journals?

A: Yes.

DEFENSE COUNSEL: Has anyone ever challenged, in any of those publications, any of your findings?

A: No.

1. How should the trial judge rule? Why?

2. Should the prosecutor or the defense counsel have asked any additional questions to buttress their respective cases? Why or why not?

3. By way of review, were any of the questions asked objectionable as to form? Why? How would you have better framed the questions?

Problem 9-23: "Fresh" Fingerprints

George LoStanza is charged with rape. The only evidence linking him to the crime scene is fingerprints that match his, found on the victim's car, which was parked in her driveway. No fingerprints of his were found inside the house. LoStanza lived in the same neighborhood as his victim and occasionally did chores for her, such as carrying groceries to the car. He argued at trial that he could have left his prints during any of these chores. The prosecution's expert, Morrie Signfield, responded that the prints, taken one hour after the crime, were then "fresh." Courts have long recognized fingerprint comparison as involving valid and reliable scientific principles and methods/techniques. The defense objects, however, under *Frye*, and, with the trial court's permission, engages in the following voir dire of the expert:

DEFENSE COUNSEL: What is a "fresh" print?

A: One no more than a few hours old.

DEFENSE COUNSEL: How can you identify a print as fresh?

A: It grabs the fingerprint powder readily, and it is an extremely clear print.

DEFENSE COUNSEL: How did you learn this technique for determining when a print is "fresh?"

A: I studied it in a fingerprinting course at the police academy.

DEFENSE COUNSEL: Did they teach you at the academy of any experiments done to support the validity or reliability of these criteria in identifying a print as "fresh?"

A: No.

DEFENSE COUNSEL: Do you know of any such experiments?

A: Yes.

DEFENSE COUNSEL: How many such experiments do you know of?

A: One.

DEFENSE COUNSEL: Who did the experiment?

A: I did.

DEFENSE COUNSEL: What did you do?

A: I took two beer cans, put my hands on some greasy fried chicken, then put my left thumb on a can, Inter my left index finger, etc., doing all my fingers at different times. The only prints that quickly absorbed powder and were

instantly clear were those put on the cans 2 hours before I dusted for the prints. I had left all the cans outdoors, in my back yard, with the time span between placing a print and dusting for it ranging between 2 hours and 2 weeks.

DEFENSE COUNSEL: I renew my objection. Any reference to the "freshness" of the prints runs afoul of *Frye*.

What ruling and why? See James E. Starrs, *Judicial Control Over Scientific Supermen: Fingerprint Experts and Others Who Exceed the Bounds*, 35 Cr. L. Bull. 234 (1999).

Problem 9-24: Fortune Cookie

Dr. Alice Barton-Smith, M.D. is a psychiatrist specializing in patients who malinger and fake symptoms. In a personal injury case, she is called to testify by the defendant insurance company. Dr. Barton-Smith will testify that, based on her 15 years of experience in studying malingering, her specific observations of the plaintiff totaling one hour, and her evaluation of the records in this case, the plaintiff was not truthful in her testimony about her whiplash injury. Instead, plaintiff was malingering. *Is this an adequate foundation to survive Frye?*

[2] The *Daubert* Test

[a] Holding and Rationale: Interpreting the Federal Rules of Evidence

In *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579, 113 S. Ct. 2786, 125 L. Ed. 2d 469 (1993), the Court squarely considered whether the 1923 *Frye* test survived adoption of the Federal Rules of Evidence. The plaintiff, Joyce Daubert, gave birth to a deformed child after taking Bendectin, an anti-nausea drug, during her pregnancy. She sued Merrell Dow Pharmaceuticals, Inc., the manufacturer of Bendectin. The trial court granted the defendant's motion for summary judgment on the ground that the Dauberts could not prove that Benectin caused the birth defect. In doing so, the trial court gave no weight to affidavits of the plaintiffs' experts that addressed the issue of causation, concluding that those experts' opinions were not based on generally accepted scientific theories. The Court of Appeals for the Ninth Circuit affirmed on similar grounds, squarely questioning whether *Frye* survived the Federal Rules. The Supreme Court held that *Frye* did not survive adoption of the Federal Rules, and that in its stead the Rules established a "relevancy and reliability" test. *Daubert* vacated the lower court's decision and remanded the case for determination of the admissibility of the plaintiffs' expert opinions under the newly announced test.[1]

The Court's analysis was straightforward and largely textual. Rule 702 governed, and nowhere did it mention "general acceptance." Moreover, there was no legislative history suggesting that Congress intended to incorporate

[1] On remand, the Ninth Circuit Court of Appeals concluded that plaintiffs' experts' opinions were not reliable and dismissed the case. *Daubert v. Merrell Dow*, 43 F.3d 1311 (9th Cir. 1995).

the general acceptance tests into the rules. To the contrary, the drafting history made no mention of *Frye*. The "austere" *Frye* standard, which made it difficult to admit scientific evidence, would be contrary to the "liberal thrust" of the Rules, which took the "general approach of relaxing the traditional barriers," like *Frye*, "to 'opinion' testimony."

What replaced *Frye*, said the Court, was a new "relevancy and reliability" standard. That new test, said the Court, is rooted in Rule 702, which in relevant part says that a qualified expert may offer an opinion "[i]f *scientific*, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue." (emphasis added) The Court sought to give meat to that test by accepting the parties' assumption that the evidence before the Court was "scientific," rather than "technical, or other specialized knowledge," and that that assumption had evidentiary significance. The purported "scientific" evidence consisted of proffered expert testimony (summarized in affidavits) claimed to support the proposition that Bendectin had caused Joyce Daubert to give birth to a deformed child.

Rule 702's "clear contemplation" of regulation of expert testimony was thus obvious, said the Court, from the Rules' reference to "scientific knowledge." "'Scientific' implies a grounding in the methods and procedures of science. Similarly, the word 'knowledge' connotes more than subjective belief or unsupported speculation." The something "more" that defined knowledge was, according to Webster's, "any body of known facts or . . . any body of ideas inferred from such facts or accepted as truths on good grounds." "Scientists, however, viewed themselves as dealing with the 'scientific method,'" which is a process, not a guarantee of certainty. "Scientific knowledge" was therefore derived from the scientific method and based on "good grounds." Significantly, concluded the Court, the requirement of "good grounds" was a clear standard of "evidentiary reliability."

But the Rule 702 requirement that the evidence offered would "assist the trier of fact to understand the evidence or to determine a fact in issue" also mattered, said the Court. The Court viewed this requirement as going primarily to relevance, for evidence that is not relevant cannot be helpful to the jury. One aspect of relevance stressed by the Court is "fit," the notion that scientific validity for one purpose is not necessarily validity for other, unrelated purposes. Thus, knowledge of the phases of the moon, noted the Court, might be relevant to how dark it was on a particular night, but not to how likely it was that a particular individual behaved irrationally.

The Court also found that Rules 701, 703, and 602 embodied the relevancy and reliability requirements. Rule 701 bars lay witnesses from giving opinions unless "rationally based on the perception of the witness." This restates the "familiar requirement of first-hand knowledge or observation." Unlike lay witnesses, however, experts have wide latitude to offer opinions not based on first-hand knowledge. Under Rule 703, for example, experts may opine based on hearsay if it would be "reasonably relied upon by experts in the particular field." As the Advisory Committee Note to Rule 602 noted, the requirement of first-hand knowledge reflects a "pervasive manifestation" of the common-law insistence on the "most reliable sources of information." Thus, the Court stated, the Rules must have eliminated the first-hand knowledge requirement

for experts only because it was assumed that the knowledge and experience of their disciplines provided a reliable basis for the opinion.

[b] The *Daubert* Factors

[i] The Factors Stated

Next, drawing on a wide array of sources (from philosophers of science to practicing scientists), the *Daubert* Court crafted a series of factors to guide the trial court in its decision on evidentiary reliability:

1. Are the theory (the underlying scientific principle) and the technique applying that theory (what the proposed Rule 702 amendment refers to as "methods") testable and have they been tested? By "tested," the Court apparently meant, "Has a hypothesis been generated, and have adequate efforts been made to falsify that hypothesis, with no such falsification yet having been achieved?"

2. Have the theory and technique been subjected to peer review and publication?

3. What is the known or potential error rate of the technique?

4. Are there standards controlling the technique's operation, that is, an authoritative statement of the circumstances under which the technique's application to a particular case will be considered trustworthy?

5. Has the principle or technique attained "widespread acceptance" (something undefined but arguably less than general acceptance, though later cases seem to treat the two terms as equivalent)?

There is no need for a "yes" answer to every question for evidence to be admissible. These questions merely help to guide the trial judge's policy judgments. Moreover, these factors are not exclusive. "Many factors will bear on the inquiry," said the Court, "and we do not presume to set out a definitive checklist or test." Rather, the trial court's inquiry is to be a "flexible one." In a footnote, the Court cited several authorities that listed overlapping guiding factors. One such citation was to Judge Jack Weinstein and Professor Margaret Berger's treatise, which listed these factors:[4]

1. The technique's general acceptance in the field.

2. The expert's qualifications and stature.

3. The use to which the new technique has been applied.

4. The technique's potential rate of error.

5. The existence of specialized literature concerning the technique.

6. The novelty of the new invention.

7. The extent to which the technique relies on the subjective interpretation of the expert.

Another of the Court's citations was to Justice Mark McCormick's suggestion of eleven factors:[5]

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[4] 3 J. Weinstein & M. Berger, Weinstein's Evidence, 702[03] (1988).

[5] Mark McCormick, *Scientific Evidence: Defining a New Approach to Admissibility*, 67 Iowa L. Rev. 879 (1982).

1. The potential error rate in using the technique.

2. The existence and maintenance of standards governing its use.

3. The presence of safeguards in the characteristics of the technique.

4. Analogy to other scientific techniques whose results are admissible.

5. The extent to which the technique has been accepted by scientists in the field involved.

6. The nature and breadth of the inference adduced.

7. The clarity and simplicity with which the technique can be described and its results explained.

8. The extent to which the basic data are verifiable by the court and the jury.

9. The availability of other experts to test and evaluate the technique.

10. The probative significance of the evidence in the circumstances of the case.

11. The care with which the technique was employed in the case.

The five factors articulated by the *Daubert* Court, and the additional factors noted in the treatise and article cited by the Court, mostly seem readily understandable, though their application to particular cases may be difficult. But one factor — whether a theory or technique is testable and has been tested — deserves special explanation.

[ii] Defining "Testability"

While it is unlikely, contrary to the views of some commentators, that the Court adopted wholesale the views of any particular philosopher of science, the Court's use of the "testability" factor has links to a philosopher of science named Karl Popper, whom the Court quoted. Popper made the important point that if we look for confirmation of our hypotheses, we will likely find it everywhere, ignoring the contradicting evidence. The true test of a science, Popper suggested, is whether our theory enables us to make predictions that can be proven wrong. So long as our predictions come true, our theory has not been "falsified." But our acceptance of the theory must be provisional, for some future prediction may indeed prove false, requiring us to reject or revise the theory.

Two commentators have explained the point thus:[6]

> Psychoanalysts, for example, could "explain" any clinical observation in terms of their theories, sometimes without even seeing the patient. And "[a] Marxist could not open a newspaper without finding on every page confirming evidence for his interpretation of history; not only in the news, but also in its presentation — which revealed the class bias of the paper." By contrast, Einstein's theory of relativity — which was also a matter of great popular interest at the time — made specific predictions about the world, any one of which could demolish the

[6] Kenneth R. Foster & Peter W. Huber, Judging Science: Scientific Knowledge and the Federal Courts 39 (1997).

> theory if not borne out. Psychoanalysis and Marxism were not falsifiable, Popper concluded. Relativity was.
>
> To be scientific. Popper argued, a theory must make predictions concrete enough to be proved wrong if the claim is not in fact true. The more the theory excludes (at least in principle), the better it is. Thus, Popper's criterion was intended to separate empirical science from other domains of human knowledge. But it also helped to distinguish good science from bad. A theory, even though it may be scientific in its basic thrust, is not a very good theory at all if it is so loosely phrased that it cannot be proved wrong — if it is in fact wrong.

These same two commentators offered this example:[7]

> In 1980 the conservative economist Julian Simon made a wager with Paul Ehrlich, a liberal ecologist well known for his dire predictions that the world is running out of natural resources. If Ehrlich is right, basic commodities of every kind should grow increasingly scarce, and their prices should rise. Simon predicts that commodities will become increasingly abundant as improvements in technology make it possible to extract more resources from the environment. Simon bet Ehrlich that the price of a basket of five metals — any five that Ehrlich cared to choose — would fall between 1980 and 1990. Ehrlich took the bet. Ten years later he lost it, decisively. He sent Simon a check.

Many might disagree that economics is a science, and many more writers have subjected Karl Popper's theories to withering criticism. Nevertheless, those theories do help to shed light on what the Court meant by its "testability" criterion. The Court also noted that, in applying this and other factors, the trial court's search is for "*evidentiary* reliability," which is shown by "*scientific* validity." Thus scientific evidence is evidentiarily "reliable" if it measures or supports what it purports to measure or support — which is the very definition of scientific "validity" given above. This does not mean, however, that scientific "reliability" (i.e., consistency) is irrelevant to the *Daubert* inquiry. As noted earlier, it is hard to gauge scientific validity if the results of experiments are inconsistent and thus unreliable.

[iii] The Gatekeeping Function

Finally, although the Court rejected the "austere" *Frye* approach, the *Daubert* opinion makes clear that easy admission of scientific evidence is not the Court's suggested alternative. Rather, the trial court must exercise a "gatekeeping" function in reviewing the quality of scientific evidence before it reaches the jury. "We are confident," declared the Court, "that federal judges possess the capacity to undertake this review." At the same time, however, the Court recognized that its flexible test might admit some evidence that Frye would exclude. To this point, the Court summarily noted that rules other than 702 — such as 703 and 403 — might sometimes justify excluding scientific

[7] *Id.* at 39–40.

evidence. More importantly, the Court, arguably directing its comments to trial judges, urged faith in the adversarial jury system, rejecting fears that

> abandonment of "general acceptance" as the exclusive requirement for admission will result in a "free-for-all" in which befuddled juries are confounded by absurd and irrational pseudoscientific assertions. In this regard respondent seems to us overly pessimistic about the capabilities of the jury, and of the adversary system generally. Vigorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof are the traditional and appropriate means of attacking shaky but admissible evidence.

Caution: Remember that, while the *Frye* inquiry is no longer determinative, a *Frye*-like analysis may be one of the factors considered by the trial court in its flexible weighing process under *Daubert.*

Problem 9-25: Linguistic Rage

John Cheng is a graduate student in philosophy who killed the members of his doctoral thesis committee. Cheng claims that he was insane, or at least extremely emotionally disturbed, at the time of the crime.

Cheng emigrated from Hong Kong a few years ago. He came from an upper middle-class family there, but his family severed all ties when Cheng refused to join the family business. Cheng had been an outstanding and privileged student in Hong Kong. But in the United States, he met one disappointment after another. For years, he was unable to get a teaching assistantship ("TA") or office job, finding work only as a bus boy in a Chinese restaurant. When he finally did get a TA position, he got such poor teaching evaluations that his contract was not renewed. His grades were barely passing. He blamed all this on discrimination based on his accent and race, for he was confident that he otherwise had a strong command of English and a talented mind. The rejection of his dissertation was the final straw, and he reacted with violence.

His defense attorney raised a novel defense: linguistic rage. Linguistic rage is rooted in sociolinguistic studies of accent. The studies show that accent is not physically a bar to understanding, but that it is part of a social categorization process by which outsider groups are subordinated. "People in power are perceived as speaking normal, unaccented English. Any speech that is different from that constructed norm is called an accent."

The defense plans to call a linguist to the stand who will testify that this ideology of linguistic subordination is widespread. Accent discrimination thus systematically excludes talented workers from jobs, promotions, and other kinds of recognition for achievement. Yet, after childhood, many adults are physiologically incapable of losing their accents. Moreover, accents are generally not a bar to understanding by those willing to listen. Furthermore, our ways of speaking are central to our social and individual identities, so failed efforts to lose our accents and the resulting ridicule cause great emotional pain. Additionally, accent and race discrimination are linked. While some Asian-Americans have now achieved visible success in American society,

Asian accents activate the worst stereotypes about Asians. In short, "accent, when it acts in part as a marker for race, takes on special significance."

The linguist, Rosini Pfund, has published articles concerning her theories on accent discrimination in numerous prestigious professional journals, mostly ones specializing in linguistic ethnography. An ethnographic study involves careful recording and description of an individual case. For example, the speech of selected immigrants with ostensible "accents" might be recorded in their various interactions with different communities — at work, in the subject's neighborhood, at church, and at home. Information may then be gathered as well from documentation, from interviews with subjects concerning their experiences-for example, losing a job, not getting a promotion, being shunned by neighbors — and concerning others' stated perceptions (under a promise of anonymity) of the subjects. Alternatively, others' perceptions may be inferred from indirect questions; their answers to questions such as, "Did you understand what Mr. Sun just said?" or "Do you think he would make a good supervisor?" might be taken as reflecting deeper but not explicitly stated views about the connections among his accent, personality, and intelligence.

Dr. Pfund relied for most of her testimony on the following sources of information:

- Ethnographic studies conducted by linguists.
- Linguistic histories of various ethnic groups who have emigrated to the United States, especially Asian-Americans, and how they have fared here.
- Writings by philosophers of language on its nature and its role in human reasoning and social organization.
- Writings by political activists in the Hispanic-American and Asian-American communities.

The defense also plans to call a psychologist who will testify that, as a result of accent discrimination, Cheng suffered from a mental disease or defect. The psychologist will also testify that Cheng suffered an extreme emotional disturbance that would justify the mitigation of murder to manslaughter.

1. How would Ms. Pfund's testimony fare under each of the *Daubert* reliability factors? Why or why not?

2. Is Ms. Pfund's testimony "relevant" under *Daubert's* "relevancy and reliability" test? Why?

3. What cross-examination questions should the prosecution ask Ms. Pfund? Why?

4. Would Ms. Pfund's testimony more likely be admitted under *Daubert* or under *Frye*? Why?

Problem 9-26: The Horizontal Gaze Nystagmus Test

Patricia Kurland is on trial for drunk driving. Officer Butch Leibel testifies that he stopped her car because it was weaving slightly. To test her for drunkenness, he administered the horizontal gaze nystagmus test (HGN). HGN is

based on the theory that alcohol consumption affects eye movement. Thus an officer might, as Officer Leibel did, ask a suspect to focus on and follow a moving pen held by the officer 12 inches from the suspect's eyes. The officer seeks to observe: (1) whether the onset of nystagmus (eye jerking) occurred when the pen was at an angle of less than 45 degrees from the center of the suspect's face; (2) whether nystagmus was moderate or distinct when the suspect's eyes have been moved as far as possible in one direction or the other; and (3) whether the suspect's eyes moved smoothly in tracking the pen. Based on the HGN results, Officer Leibel testified that Kurland: (a) was then under the influence of alcohol and (b) that she had operated her car at a blood alcohol level of over.10, the legal limit in this state. Officer Leibel testified that he was trained to test for horizontal gaze nystagmus at the police academy and that he has since administered hundreds of HGN tests. He testified that he had tested Kurland following the Drug Evaluation and Classification Program standards that had been developed during the 1980s and 1990s by the Los Angeles Police Department to guide its officers in the correct procedures for administering HGN. Franklin Eyeworth, a well-respected local optometrist, also took the stand. He testified that optometrists routinely look for nystagmus and generally accept the principle that it is measurably affected by alcohol consumption.

1. Should any or all of the officer's and the optometrist's testimony be excluded under *Daubert*? Why or why not?

2. Would it change your opinion to learn that the National Highway Traffic Safety Administration (NHTSA) had conducted both laboratory studies and field tests of HGN accuracy using the L.A. Police Department standards. NHTSA issued a report concluding that: (1) in laboratory studies, officers using HGN were 90% accurate in identifying persons who had recently consumed alcohol and 70% accurate in identifying who had a blood alcohol level higher than .10%; and (2) in field studies (observing officers using HGN on real suspects on the street, then measuring the suspects' blood alcohol level using blood tests), the officers were 70% accurate in identifying who had recently consumed alcohol and 40% accurate in identifying who had a blood alcohol level higher than .10%?

Problem 9-27: My Brand New Miatta

Two brand new Miatta automobiles collided at the intersection of Fourth and Vine. At trial in a personal injury action arising from the collision, the plaintiff is expected to offer a police officer as an expert in accident reconstruction. Several eyewitnesses are also expected to testify at the trial about the accident. You, as defense counsel, are about to take the deposition of the officer. *What questions should you ask him specifically to help you determine whether to file a motion in limine to exclude his testimony at trial as violative of* Daubert*? What do you think his answers are likely to be? Do you think it likely that his testimony will ultimately be admitted? Why?*

Problem 9-28: Harassment!

In a sexual harassment action, the plaintiff offered the testimony of Dr. Lucy Barnes, an expert psychologist, to describe the profile of a sexual harasser.

Dr. Barnes will testify that a sexual harasser is typically married, is the victim's supervisor, and has known the victim for at least six months. Dr. Barnes bases this conclusion on surveys done of men who either voluntarily sought treatment once their alleged harassment was revealed or were ordered to do so by their employers as a condition of continued employment. *Is this testimony admissible?*

Problem 9-29: Probably Guilty

Ms. Juanita Brooks was robbed by a blonde woman wearing a ponytail who fled in a partly yellow automobile, driven by a mustached and bearded African-American man, which immediately drove away from the scene at high speed. The defendants, Robert Mollins and Sandy Travolta, were stopped by the police ten minutes after the crime in the general vicinity of the robbery and fit the victim's description of the thieves, though the victim made only a tentative identification at trial of Travolta as the robber and Mollins as the lookout and getaway driver.

To bolster its case, the prosecution called an instructor of mathematics at a state college. The prosecutor asked the mathematician, Randall Numerology, the following:

PROSECUTOR: Dr., please assume the following probabilities:

	Characteristic	*Individual Probability*
A.	Partly yellow automobile	1/10
B.	Man with mustache	1/4
C.	Girl with ponytail	1/10
D.	Girl with blond hair	1/3
E.	Negro man with beard	1/10
F.	Interracial couple in car	1/1000

What is the probability that the crime was committed by any single couple with such distinctive characteristics?

A: One in 12,000,000.

PROSECUTOR: How did you come up with that figure?

A: By using the product rule, which states that the probability of the joint occurrence of a number of mutually independent events is equal to the product of the individual probabilities that each of the events will occur.

PROSECUTOR: So you multiplied these probabilities?

A: Yes.

PROSECUTOR: What does it mean to say that events are "mutually independent"?

A: It means that the probability of one event's happening does not alter the probability of another event's happening. For example, the probability of rolling a "2" with one die is 1/6, as is the probability of rolling a "3." If you now roll a "2," that does not make it any more or less likely that your next die throw will be a "3." That probability was 1/6 before the "2" was rolled and is still 1/6 after.

Should defense counsel have objected under Daubert? *Why or why not?*

[iv] Procedural Concerns

Several procedural concerns further illuminate the meaning of the *Daubert* test.

First, the Court declared the reliability inquiry to be a competency question under Rule 104(a). Accordingly, the proponent of the evidence has the burden of proving that a scientific principle or technique is reliable to the trial judge's personal satisfaction by a preponderance of the evidence. This may require a pre-trial or mid-trial hearing at which the trial court will hear and resolve conflicting evidence on both sides of the reliability question. In making this judgment, the trial judge may need to resolve credibility disputes between experts. The trial court must keep in mind, however, that her focus is to "be solely on principles and methodology, not on the conclusions that they generate." While the meaning of this phrase is ambiguous, it should not mean that evaluating the reliability of a scientific theory or technique (method) must be done without considering the conclusions drawn from the data gathering or the selection of research strategies:[8]

> When scientists conduct research, they generally do not draw sharp distinctions between the research methodology chosen and the conclusions drawn from that research. Some conclusions are permitted by a particular methodology and some are not. Thus, when studying the toxic effects of drugs, use of animals rather than humans as subjects restricts the conclusions that might be drawn from the data. The decision to use multiple regression analysis affects what conclusions are within contemplation. Research on the carcinogenic character of second-hand smoke conducted on white rats, by subjecting them to the equivalent of ten packs-a-day, might employ exactly the right methodology and reasoning for concluding that such smoke causes cancer in white rats; but if the researcher is interested in generalizing the study to humans, then we must evaluate the methodology and reasoning in light of that purpose. Scientific conclusions are inextricably connected to the methodologies used to reach them.

What the Court seems to be saying, therefore, in delegating to the trial judge the task of evaluating the reliability of "principles and methodology" but not of conclusions, is that the trial court's admissibility decision is not to be swayed by the expert's final conclusion when applying the general principles and methods (techniques) to the specific case. In other words, the trial court's evaluation of the reliability of the major premises in the expert syllogism is not to be affected by the expert's view of the accuracy of the minor premises or the resulting conclusion. Professor Faigman and his colleagues, using slightly different language, explain the matter this way:[9]

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[8] David L. Faigman, et al., Modern Scientific Evidence: The Law and Science of Expert Testimony § 1-3.3.1[21], at 22 (1997). *See also* Advisory Committee Note to amended Rule 702 amendment (making similar point).

[9] *Id.* at 24–25.

> There is, however, another way to understand Justice Blackmun's [the author of the *Daubert* majority opinion] distinction between methodology/reasoning and conclusions that appeals to both legal and scientific mind-sets. Most science comes to the courtroom as part of a four-tiered system of knowledge acquisition. The most general or abstract might be termed "general theory," the next most abstract is "general application," the third might be termed "general technology," and the fourth, and most concrete for legal purposes, might be termed "individual application." An example will illustrate these tiers. DNA profiling is perhaps the most powerful and, thus, the most troubling forensic technology ever to be used in a court of law. But in the courtroom, DNA evidence is a product of a complex web of science and technology. First, at the level of "general theory," is the biological theory of the DNA molecule. Second, at the level of "general application," the general theory has been studied in respect to various populations. In doing so, scientists have hypothesized and analyzed data about the complexion and distribution of DNA characteristics in populations of more or less homogeneity. Third, at the level of "general technology," scientists and technicians have devised various techniques for "profiling" DNA, including the two best known of Restriction Fragment Length Polymorphisms (RFLP) and Polyamerase Chain Reaction (PCR), the latter used to amplify DNA found in small forensic samples. Finally, and most obviously pertinent to the law, at the level of "individual application," lab technicians take this general technology and apply it to individual cases to determine whether a match has been found between a forensic sample and a known sample.
>
> . . . .
>
> This understanding of the division of science into levels of abstraction offers the best interpretation of Justice Blackmun's distinction between methodology/reasoning and conclusions. Specifically, the first three levels of science, "general theory," "general application," and "general technology," are all aspects of science that transcend individual cases and for which the judge is more likely, over time, to be the better evaluator of scientific merit. These three "general" levels are contemplated by Justice Blackmun's "methodology and reasoning" category. [The fourth level of individual application is, however, not the judge's concern].

Under the proposed amendment to Rule 702, however, the judge has a role to play at the level of individual application, namely ensuring that the principles and methods have been reliably applied to the individual case. *See* Advisory Committee Note to Rule 702. But if there is a dispute about the underlying facts to which the principles and methods are applied, under the proposed amendment the trial court should not exclude the expert's testimony because the court believes one version of the facts and not the other. *Id.* Moreover, at any level of abstraction, two experts might each rely on competing principles or methods that are both found by the court to be reliable. *Id.*

The second procedural concern arises because, in *General Electric Co. v. Joiner*, 522 U.S. 136, 138–139, 118 S. Ct. 512, 139 L. Ed. 2d 508 (1997), the

Court held that a trial court's decision concerning the *Daubert* reliability requirement is subject to appellate review only for an abuse of discretion. Thereafter, in *Kumho Tire Co. v. Carmichoel*, 526 U.S. 137, 119 S. Ct. 1167, 143 L. Ed. 2d 238 (1999), the Court held that trial judge discretion extends to two other decisions as well: (1) what factors are to be used in making the reliability judgment concerning a particular principle or techoique in a particular case (in the Court's words, "whether *Daubert's* specific factors are, or are not, reasonable measures of reliability in a particular case is a matter that the law grants the trial judge broad latitude to determine"); and (2) whether it is necessary to hold a "*Daubert* hearing" in the first place, that is, whether the reliability inquiry can instead be resolved by judicial notice or by other procedures that do not require taking testimony. This enormous discretion vested in the trial court limits appellate courts' role in achieving consistency in the treatment of scientific evidence and implementation of *Daubert's* dictates. Indeed, even before *Kumho Tire*, many trial courts have started to show increasingly close scrutiny of various forms of scientific evidence, despite the *Daubert* Court's language about the "liberal thrust" of the federal expert evidence rules. Accordingly, in practice it is unlikely that *Daubert* will necessarily prove to be a more lenient standard than *Frye*. *But see* Advisory Committee Note to Rule 702 ("A review of the caselaw after *Daubert* shows that the rejection of expert testimony is the exception rather than the rule").

Problem 9-30: Reversal of Rage

Assume the facts of Problem 9-25 on linguistic rage:

1. Which of the original *Daubert* factors, if any, would you as trial judge apply in conducting your *Daubert* analysis? Why?

2. What additional factors, if any, would you decide are relevant to the *Daubert* inquiry if you sat as the trial judge? Why?

3. If a trial judge ruled that all the original *Daubert* factors — and no others — not only had to be considered but had to be met so that the failure of any one factor would result in exclusion in this case, would that ruling likely be reversed on appeal? Why?

Problem 9-31: Concluding Methods

Is it relevant, in assessing the reliability of principles and methods under Daubert:

1. That a psychologist concludes that a murder suspect was 100% incapable of committing a violent act, when all treatises in the field explain that, according to the empirical data, there are no circumstances under which psychologists can confidently make such claims?

2. That a polygrapher concludes that the subject was telling the truth when every one of the indicators on the polygraph test are the kind that standard training texts describe as indicating a lie?

3. That a handwriting examiner declares that the signature on a forged check matches the defendant's signature when scholars are split on whether

handwriting examiners can make any such judgments with a high degree of confidence?

4. That a biologist testifies that an anti-nausea drug causes cancer in humans when studies on its carcinogenic effects have all involved white rats?

Problem 9-32: HGN and Daubert Hearings

Two experts disagree over whether the horizontal gaze nystagmus test mentioned in Problem 9-26 can identify persons whose blood alcohol level is over .10%. *Which of the following should the trial judge do?*

1. Not hold a *Daubert* hearing but summarily exclude HGN testimony.

2. Admit the testimony to avoid invading the province of the jury to decide credibility questions.

3. Hold a *Daubert* hearing, decide who is credible, and find the facts necessary to deciding the *Daubert* question by a preponderance of the evidence.

[C] Evidence Based on Technical or Other Specialized Knowledge, Including Social Science

The *Daubert* factors, we have seen, were crafted in the context of determining when to admit "scientific" evidence. Furthermore, *Daubert* itself involved the natural, not the social, sciences. Three questions thus arose: (1) Does the *Daubert* test apply to non-scientific expert testimony, that is, to "technical or other specialized knowledge?" (2) If yes, how, if at all, should the *Daubert* test be modified to accommodate these other sorts of knowledge? (3) Is social science "science," and, whatever the answer to that question, how, if at all, should *Daubert* be applied differently to this sort of knowledge as compared to natural scientific knowledge?

The Court answered the first two of these questions in *Kumho Tire Co. v. Carmichael*, 526 U.S. 137, 119 S. Ct. 1167, 143 L. Ed. 2d 238 (1999). Before *Kumho Tire*, some courts admitted some evidence that would likely be excludable under a careful application of the *Daubert* factors, arguing that a more lenient standard applied because the particular principle or technique involved was not "scientific" evidence. *Kumho Tire* held otherwise, concluding that all expert testimony, including "technical and other specialized knowledge," is governed by *Daubert's* "relevancy and reliability" standard. *Kumho Tire* involved an engineer's testimony. The Court explained:[10]

> [I]t would prove difficult, if not impossible, for judges to administer evidentiary rules under which a gatekeeping obligation depended upon a distinction between "scientific" knowledge and "technical" or "other specialized" knowledge. There is no clear line that divides the one from the others. Disciplines such as engineering rest upon scientific knowledge. Pure scientific theory itself may depend for its development upon observation and properly engineered machinery. And conceptual

[10] *Kumho Tire Co. v. Carmichael*, 526 U.S. 137, 119 S. Ct. 1167, 1174, 143 L. Ed. 2d 238 (1999).

> efforts to distinguish the two are unlikely to produce clear legal lines capable of application in particular cases.

Rule 702, noted the Court, articulated a single standard for admitting expert testimony, regardless of its type. Furthermore, the reason the Federal Rules of Evidence grant experts more latitude than other witnesses, the Court concluded, is the assumption that all expert testimony has a reliable basis. All expert testimony must therefore be relevant and reliable. The opinion suggested, although this question was not specifically before the Court, that social science is governed by this same standard, whether we consider that discipline "scientific" or not.

Reliability does not necessarily have to be judged, however, by the same five factors articulated in *Daubert*:

> We can neither rule out, nor rule in, for all cases and for all time the applicability of the factors mentioned in *Daubert*, nor can we now do so for subsets of cases categorized by category or expert or by kind of evidence. . . .
>
> *Daubert* itself is not to the contrary. It made clear that its list of factors was meant to be helpful, not definitive. Indeed, those factors do not all necessarily apply even in every instance in which the reliability of scientific testimony is challenged. It might not be surprising in a particular case, for example, that a claim made by a scientific witness has never been the subject of peer review, for the particular application at issue may never previously have interested any scientist. Nor, on the other hand, does the presence of *Daubert's* general acceptance factor help to show that an expert's testimony is reliable where the discipline itself lacks reliability, as, for example, do theories grounded in any so-called generally accepted principles of astrology or necromancy.

After *Kumho Tire*, trial courts will be faced with the perhaps daunting task of coming up with helpful factors to guide the admissibility decision in a wide range of very different expert disciplines. The Court has not, therefore, entirely erased the distinction between "scientific" and "non-scientific" testimony because, for example, the reliability of a physicist's opinion necessarily requires understanding what are the standards of "good physics," a natural science. But that does not correspondingly mean that, on the other hand, Freudian psychology is to be judged by the standards of "good Freudian psychology," for *Kumho Tire* requires a court to determine whether an entire discipline is reliable. Some commentators have argued that Freudian psychology, unlike some other sorts of psychology, is so subjective that there is no objective way to gauge its reliability. Thus, a Freudian psychologist might interpret a particular dream to mean that a patient was obsessively attached to his mother. Yet another Freudian psychologist might offer a completely different interpretation of the same dream. How would we devise a "test" to determine who is right? On the other hand, some aspects of Freudian psychology are testable but have not been sufficiently tested. We could thus

devise tests, as some indeed have, to determine whether Freudian talking therapy alleviates depression. Some commentators would therefore insist that all Freudian psychology — indeed all social science — be judged by the same sorts of factors as were involved in *Daubert* itself, with special emphasis on "testability and testing." Where this is found wanting, the testimony should be excluded.

Much social science can and should indeed be done using procedures similar to, or at least analogous to, those in the natural sciences. But even social science that cannot, or has not yet, met such standards of pseudo-natural-scientific testing can still sometimes be useful to a jury. This can be so even if the social scientist, while drawing on general principles, uses techniques and reaches conclusions in some ways unique to the particular case. Under *Kumho Tire*, therefore, there may be certain types of expert testimony using methods significantly different than those in the natural sciences that are nevertheless arguably still reliable. *Cf.* Advisory Committee Note to Rule 702 ("In certain fields experience is the predominant, if not sole, basis for a great deal of reliable testimony"). Here are three illustrations:

Example 1: The Acute Observer

Forensic linguists study conversations that are relevant to issues at trial, to interpret to the jury meanings that might not be evident on their face. One such linguist testified for the defense in a case in which the defendant, a chemical manufacturer, was charged with conspiring to find a pill press to aid a drug dealer. The suspect's defense was that he became so uncomfortable when he finally realized what the other party had proposed, that he sought only to get out of the conversation. His audiotaped statements did not, therefore, reveal his agreement to anything.

The linguist was able to explain why the other party's early offers were ambiguous (thus explaining why the listener would participate for so long), and to point out why the rules of social politeness would make it hard for the listener to extricate himself from the conversation. Similarly, the linguist noted that the listener-defendant brought up only 15 percent of the words used, and spoke in much shorter sentences than did the primary speaker. Furthermore, most of the listener's turns at talk were one-word utterances, largely feedback markers, "uh-huh," "yeah," "hmmm," "oh," "okay," and "man." These tactics were arguably efforts of the listener to distance himself from the conversation without alienating the primary speaker, instead of actual acceptance of the speaker's proposal.

The only direct statement of agreement by the listener was in offering to "check around," which was an indirect response to the speaker's asking where he could get a pill press. But eight days later, in a second conversation, the listener simply reports, "I haven't had any luck." This lack of specificity about where and how he looked, about his prior experiences with or contacts in locating pill presses, and his lack of enthusiasm or elaboration, are the kind of hollow offers that people often use to end uncomfortable exchanges quickly, like "Let's get together for lunch sometime."

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Henry Drummond (Spencer Tracy) examines Biblical expert Matthew Harrison Brady (Fredric March) in *Inherit the Wind.*[*]

This combination of close observation of the defendant's speech with background information on the sociodynamics of ordinary conversation arguably offered a plausible alternative to the prosecution's conspiracy theory.

Example 2: Overcoming Cognitive Blinders

A prosecution expert in a rape case involving an African-American victim testifies about empirical research showing that most people, including jurors, are likely to be more skeptical of the testimony of African-American victims than white victims. Similarly, they are more willing to believe that an African-American woman consented to the defendant's behavior than that a white woman did. The defense objects that the testimony is irrelevant and only concerns generalizations, thus offering no reliable guidance concerning whether this alleged victim is telling the truth.

The prosecution responds that the testimony alerts the jurors to an unconscious racist bias that may hamper their ability to decide fairly. The testimony enhances jurors' rationality by alerting them to their own prejudices, the "cognitive blinders" that can bar them from seeing the truth. *Cf.* Advisory Committee Note to Rule 702 ("it might also be important in some cases for

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an expert to educate the factfinder about general principles, without ever attempting to apply these principles to the specific facts of the case").

Example 3: Valuing Interpretive Social Science

A sociologist testifies at a sexual harassment trial in support of a hostile environment claim. A state sexual harassment statute extends gender-based harassment to include non-sexual but systematic forms of gender disparagement, exclusion, and hostility. The sociologist recounts her ethnographic study of legal practice, which revealed a discriminatory emotional division of labor. Thus, male lawyers turned social events into competitions over who could drink the most beer, routinely mistook female associates for secretaries, and considered those associates shrill if they behaved aggressively but thought them weak if they took a more relational approach. Yet male associates were praised for their "hardball" tactics. Males also laughed at women lawyers who told tales of their aggressive behavior, which put women in a one-down position. As a consequence, women lawyers generally had a lower social and professional status than male lawyers in the study. The sociologist similarly interpreted the behavior she observed in visiting the law firm on which the current sexual harassment suit is based, relying on her earlier ethnographic study in evaluating the current defendant's conduct. This testimony relies on interpretive social science, social science that assigns meaning to human action rather than, for example, doing experiments.

Problem 9-33: Raging Against Daubert

Return again to *Problem 9-25* on linguistic rage. *After* Kumho Tire, *can you articulate arguments that Daubert's "testimony" and error rate factors should not apply (or at least not apply in the same way as with the natural sciences) to the linguistic rage inquiry? What other factors should apply?*

Problem 9-34: Fred Fraud Fred

The defendants, brothers named Fred, were charged with mail fraud, securities fraud, and conspiracy. At trial, the prosecution called a well-known securities analyst to testify about the defendants' conduct. The witness, Rex Limbart, testified that, in his opinion, the actions by the defendants Fred constituted a "clear scheme to defraud others." *Is Mr. Limbart's testimony admissible? Why?*

Problem 9-35: Baseball

James Bell, a promising outfielder for the New Haven Hawks baseball team, signed a multi-year contract with a Japanese major league team. His then-existing New Haven contract allowed both sides to be excused from the contract if "good faith negotiations did not produce an extended agreement."

The Hawks sued, claiming Bell did not act in good faith. At trial, James called his brother, an expert in negotiations, to testify that "In my opinion, James definitely acted in good faith." *Is this testimony admissible? Why?*

Problem 9-36. The Best Defense

Plaintiff filed a civil rights action for damages against the Sheriffs Office, alleging that the Sheriff conducted warrantless searches of his home and office. The plaintiff called famous attorney Matlock Mason to the stand to testify as an expert. Matlock states that the officers' conduct qualifies as a "search" and that the plaintiffs had not legally "consented" to the search. *Is Matlock's opinion admissible?*

§ 9.06 THE MINOR PREMISES

Once an expert has testified that underlying scientific principles and the techniques applying them are sound (the major premises), those principles and techniques must be applied to the facts in the specific case (the minor premises). There has been some dispute about which rule should be central to the questions of admissibility of minor premises testimony: Rule 702, which requires helpfulness to the trier of fact, or Rule 703, which requires experts to "reasonably rely" on data not otherwise admissible. There has also been some disagreement about whether something like *Daubert's* analysis governd the application of Rule 703. Courts often evade the question simply by applying both Rule 702 and Rule 703 and using similar analyses under each. Whichever approach is adopted, the clear trend is to subject minor premises, not merely major premises, to a searching reliability inquiry. Here we adopt the analytical scheme of Rule 702. Under that scheme, Rule 702 governs both major and minor premises, and both must be reliable. Thus the last clause requires that "the witness has applied the principles and methods reliably to the facts of the case." Principles and methods may be misapplied in innumerable ways, most obviously including the failure to follow prescribed procedures and the failure to collect all necessary information.

Example 1

Several researchers have proposed that properly trained dogs can accurately sniff the scent on an item dropped by a fleeing criminal offender and match it to the scent of a person in a line of suspects (a "dog scent lineup"). The researchers specify, however, that confidence in such a lineup is possible only where the dog has been: (1) specially trained in the technique; (2) "calibrated," that is, repeatedly and recently tested in controlled experiments for proof that the individual dog can do these lineups accurately; (3) placed in a room with the suspects hidden behind a screen and the handler outside the room so that no one can give the dog "minimal cues," subtle subconscious gestures that might prod the dog to identify a particular suspect; and (4) allowed to sniff suspects who are all wearing similar recently-washed clothing. The principle that each person hns a unique scent and the method/technique that properly trained dogs can accurately identify and match that scent have been proven to the trial judge by a preponderance of the evidence, thus meeting the *Daubert* test.

John Van Jones, a police dog handler with ten years of experience tracking fleeing suspects with dogs, testifies concerning the results of a scent lineup

in which his dog, Flea-Bit, identified the defendant, George Harrison, as a killer. Defense counsel objects that Jones failed on direct to establish a foundation of reliable application of the principles and methods of scent lineups to Harrison's case. The trial judge, rather than immediately sustaining the objection, permits Cory Little, defense counsel, to question Jones on voir dire. That questioning reveals that: (1) Flea-Bit was trained to track suspects fleeing the crime scene but never trained in dog scent lineups; (2) Flea-Bit has not been calibrated; (3) Jones was in the room with Flea-Bit when he identified Harrison; (4) Jones did not arrange for the lineup participants to wear similar, recently-cleaned clothing; and (5) this was Jones' first lineup. Little renews his objection that the case-specific application of lineup principles and methods was not reliably done and asks the court to reconsider its earlier ruling that Jones was qualified to testify, objecting to those qualifications. The trial judge granted the reconsideration motion and sustained both objections.

Example 2

Jenny Jones is charged with fraudulently cashing bad checks. She testifies at trial that she was given the checks by her boyfriend, who assured her that they were good but said he was too busy to cash them. Douglas Lee, a psychologist, then testified that he had interviewed Ms. Jones and concluded that she was an abnormally gullible woman, unable to believe that someone she loved would lie to her. The following exchange takes place between the prosecutor and Dr. Lee on cross-examination.

PROSECUTOR: Dr. Lee, you received your degree in forensic psychology from the University of Utah, is that correct?

A: Yes.

PROSECUTOR: And the course you studied there on how to do character assessments of patients was done under the eminent Dr. Wilfred Daily?

A: Yes.

PROSECUTOR: "Gullibility" is a character trait, I take it?

A: Yes.

PROSECUTOR: In judging whether a patient displays a character trait, you were taught to begin with a clinical interview, were you not?

A: Yes.

PROSECUTOR: And you did such an interview here?

A: Yes.

PROSECUTOR: But you were also taught to interview the patients' family, friends, teachers, and co-workers?

A: Yes.

PROSECUTOR: But you didn't interview any of Ms. Jones' family, did you?

A: No.

PROSECUTOR: Nor did you interview her friends?

A: No.

PROSECUTOR: You never once spoke to any of her co-workers, correct?

A: Yes.

PROSECUTOR: Nor did you talk to her teachers?

A: No, I did not.

PROSECUTOR: Indeed, you never even asked Ms. Jones the names of any of her family, friends, teachers, or co-workers?

A: Correct.

PROSECUTOR: You interviewed no one other than Ms. Jones in reaching your assessment that she was "abnormally gullible?"

A: Yes.

PROSECUTOR: And you assumed, without checking for corroborating evidence from anyone else, that all that she told you in your clinical interview was true?

A: Yes.

PROSECUTOR: I ask the court to reconsider its ruling that Dr. Lee may testify and move to strike his testimony as not based on the reliable application of relevant psychological principles and methods to this case.

JUDGE: Motion granted.

There is an ambiguity in Rule 702. The Rule requires that "the testimony [be] based upon sufficient facts or data," next requires that the "testimony [be] the product of reliable principles and methods," and concludes that "the witness has applied the principles and methods reliably to the facts of the case." The placement of the initial reference to "facts or data" immediately before "principles and methods" suggests that "facts or data" refers to sound information and procedures being used to establish the reliability of the major premises, that is, to the "principles and methods." Furthermore, the focus of the Advisory Committee Note on *Daubert* — which addressed principles and methods-supports this interpretation. Moreover, only the last clause of Rule 702 mentions "the facts of the case," suggesting that the first two clauses (the first one including the phrase "facts or data") concern non-case-specific inquiries, that is, major premises.

However, the Advisory Committee Note to Rule 702, in the context of defining the term "data," refers to the Advisory Committee Note to Rule 703. The Rule 703 Note declares that the "facts or data" upon which an expert opinion may be based may be derived from three possible sources: (1) the expert's first-hand observations, (2) a hypothetical question, and (3) data presented to the expert outside of court other than by the expert's own perception. This Note, some commentators have argued, clearly considers "facts or data" to refer to the case-specific (minor premise) basis for an expert opinion. If that is so, then Rule 702's use of that same term arguably also refers solely to the minor premises.

If "facts or data" in Rule 702 refers only to the minor premises, however, why does the Rule apparently require that all expert testimony be "based upon sufficient" facts or data but also require that the principles and methods be "applied . . . reliably" to the facts of the case? The reference to case-specific application would seem redundant if the early "facts or data" reference includes both major and minor premises but even more redundant if it refers only to minor (case-specific) premises. The redundancy can be avoided if "facts or data" instead refers only to the major premise. The Advisory Committee Note does not clear up the confusion.

One argument that the "facts or data" phrase should nevertheless be read as including both the major and minor premises turns on distinguishing between two sorts of minor premise error:

Example 3

An oncologist (cancer specialist) testifies that X-rays of the plaintiff showed what could be a malignant lung tumor. Accordingly, he had advised the plaintiff to have a painful biopsy, but the biopsy revealed no tumor at all, malignant or otherwise. The source of this error turns out to be two-fold: first, the oncologist misread the X-ray; second, the radiologist took the X-ray poorly, creating avoidable shadows that made it hard to read.

Because of the radiologist's error, the oncologist's case-specific opinion — that *this patient* needed a biopsy to examine a potentially cancerous tumor — was based on flawed X-rays, that is, case-specific facts or data that were not reliable. But, even given the flawed X-rays, the oncologist compounded the problem by misreading what could be clearly seen, thus "misapplying" the principles and methods for sound X-ray interpretation. The "facts or data" phrase in Rule 702 could easily be read to include the former sort of minor premises problem, while the Rule's reference to reliable application of principles and methods can easily be read as referring to the latter sort of minor premises issue.

For the reasons we noted earlier, we do not think that the rule's text supports the argument that "facts or data" as there used refers solely to the minor premises. The phrase most likely refers to the sources of information justifying belief in the trustworthiness of both the major and minor premises. Whatever "facts or data" means, however, the X-ray example illustrates two different sorts of case-specific errors that can arise, whatever we call them.

If it is true that Rule 702 governs both major and minor premises, would there still be a minor premise role for Rule 703? The answer is "yes." Rule 702 would govern whether an opinion is based on sufficiently reliable information and whether that information has been sufficiently reliably applied to the specific case to merit admission. But some of that information might, under other evidence rules, be inadmissible, or making it admissible might require costly subpoenaing of witnesses. The original Advisory Committee Note to Rule 703 explains as follows:

> Thus a physician in his own practice bases his diagnosis on information from numerous sources and of considerable variety, including statements by patients and relatives, reports and opinions from

> nurses, technicians and other doctors, hospital records, and X rays. Most of them are admissible in evidence, but only with the expenditure of substantial time in producing and examining various authenticating witnesses. The physician makes life or death decisions in reliance upon them. His validation, expertly performed and subject to cross-examination, ought to suffice for judicial purposes.

As amended, Rule 702 thus first determines whether minor premises are reliable, but Rule 703 controls whether, if some of the bases of the reliable minor premises are inadmissible under other rules, the expert's opinion should nevertheless be admitted. The Advisory Committee Note to Rule 702 puts it this way:

> There has been some confusion over the relationship between Rules 702 and 703. The amendment makes clear that the sufficiency of the basis of an expert's testimony is to be decided under Rule 702. Rule 702 sets forth the overarching requirement of reliability, and an analysis of the sufficiency of the expert's basis cannot be divorced from the ultimate reliability of the expert's opinion. In contrast, the "reasonable reliance" requirement of Rule 703 is a relatively narrow inquiry. When an expert relies on inadmissible information, Rule 703 requires the trial court to determine whether that information is of a type reasonably relied upon by other experts in the field. If so, the expert can rely on the information in reaching an opinion. However, the question of whether the expert is relying on a *sufficient* basis of information-whether admissible information or not — is governed by the reliability requirements of Rule 702.

The Advisory Committee Note to Rule 702 also goes on to articulate a connection between underlying information and conclusions, at least in the minor premise (case-specific) context, though suggesting a similar point for the major premise context:

> The Court in *Daubert* declared that the "focus, of course, must be solely on principles and methodology, not on the conclusions they generate." 509 U.S. at 505. Yet, as the Court later recognized, "conclusions and methodology are not entirely distinct from one another." *General Elec. Co. v. Joiner*, 522 U.S. at 146. Under the amendment, as under *Daubert*, when an expert purports to apply principles and methods consistent with professional standards, and yet reaches a conclusion that other experts in the field would not reach, the trial court may fairly suspect that the principles and methods have not been faithfully applied. *See Lust v. Merrell Dow Pharmeceuticals, Inc.*, 89 F. 3d 594, 598 (9th Cir. 1996). The amendment specifically provides that the trial court must scrutinize not only the principles and methods used by the expert, but also whether those principles and methods have been properly applied to the facts of the case.

One final question remains: If a case-specific minor premise inquiry survives Rule 702 reliability analysis but the minor premise is based on inadmissible data, when may an expert "reasonably rely" on such data in forming an opinion? No consensus has emerged, but the courts have suggested some approaches. The liberal school equates "reasonable" reliance with "regular" or "customary" reliance. The judge's task is to determine whether it is the customary practice of other experts in the relevant speciality to use a particular data source in their reasoning. A more restrictive school considers "reasonable" reliance to be a matter for independent determination by the trial judge, who must conduct a searching inquiry to determine the wisdom of an expert's relying on a particular data source. The trial judge need not defer to customary practice, although that may be a relevant factor. A middle approach regards customary reliance on a data source by experts in a field as strong evidence of reasonableness, perhaps even creating a rebuttable presumption of reasonableness.

There is also a dispute over to what information the "reasonable reliance" standard must apply. Rule 703 refers to facts or data being "*of a type*" reasonably relied upon by experts in the field. Some courts conclude, therefore, that the trial judge's narrow inquiry should be whether the expert properly relied on the particular "type" or category of information, rather than whether it was reasonable to rely on the *specific* facts or data of that type in this case. A contrary view reads Rule 703 as empowering the trial judge to question the expert's wisdom in relying on *particular* facts or data, not simply determining whether those relied upon were of the general sort to which experts would reasonably look.

Finally, there is a dispute over whether the phrase "facts or data" in Rule 703 referred only to the case-specific minor premise bases of an expert opinion or whether it also referred to the bases for the major premise. Professor Imwinkelried has forcefully argued that the only way to avoid unnecessary overlap between Rules 702 and 703, and otherwise to make sense of those two rules, is to interpret the latter as limited to the minor premises and the former to the major premises. But we saw early in this chapter that Rules 702 and 703 seem to treat the term "facts or data" as applying to both major *and* minor premises ("facts" probably referring to major, and "data" to minor, premises). Rules 702 and 703 thus probably regulate all premises, with Rule 702 testing whether those premises are reliable and Rule 703 determining whether, even if the premises are reliable, the opinions are permissible when based on otherwise inadmissible evidence. But even before Rules 702 and 703 were amended, many courts and commentators treated the phrase "facts or data" — which originally appeared only in Rule 703 — as including all premises in the expert syllogism. This interpretation creates room for confusion concerning the respective roles of the two rules.

Example 4

Remember that in *Daubert* plaintiffs argued that the anti-nausea drug, Bendectin, caused a child to be born with birth defects. Among the types of expert evidence used by the plaintiffs was epidemiological analysis. Plaintiffs

conceded that the published epidemiological analyses did not show a statistical correlation between the use of Bendectin and congenital birth defects. But plaintiff's expert contended that after pooling the data on which the earlier studies relied (a technique known as "meta-analysis"), the epidemiological data did yield a statistically significant, and therefore potentially causal, relationship. Under this approach to the current rules, Rule 702 (as interpreted in *Daubert*) addresses whether the meta-analysis of epidemiological data is a reliable scientific technique (a major premise question). Rule 703, on the other hand, would determine this other major premise question: Was it reasonable for the expert to rely on the data in these earlier studies in doing a meta-analysis? Rule 703 would also govern case-specific questions, such as whether an adequate basis existed for the experts to assume that Mrs. Daubert ingested Bendectin (as opposed to another product) and that her son suffered from the specific types of defects that Bendectin is capable of causing.

An alternative view of the current rules would addresses all major premise questions under Rule 702 (the reliability of meta-analysis and the wisdom of relying on the data in the earlier studies to do a meta-analysis) and minor premises questions (what Mrs. Daubert ingested and what were Jason's symptoms) under Rule 703.

Problem 9-37: Probabilities Revisited

In Problem 9-29, assume that the prosecutor offered no proof concerning the probabilities he noted of the "independent events." Rather, he simply asked the mathematician to assume those probabilities. In his closing argument, the prosecutor told the jury that they were free to apply whatever probabilities they believed were adequate, understanding that they had to apply the product rule to whatever probabilities they chose.

1. What grounds, if any, should the defense have raised in objecting to the mathematician's testimony beyond those already discussed in Problem 9-29?

2. What additional proof could the prosecution have offered, if any, to fend off such an objection?

Problem 9-38: The Crime Scene Investigator

A well-known former professional football player is charged with stabbing his ex-wife to death. According to police DNA forensic scientists, blood found at the crime scene matched the defendant's blood. But the defense argues that the crime scene investigation was so poorly done as to risk contamination and tampering. The defense calls Michael Straub, an experienced murder forensic investigator, to opine that the investigation did indeed raise these risks. His analysis relied on his interviews with the lead detectives on the case and the lab representatives at the crime scene and the lab technicians who did the testing. Straub testifies that each of the officers and technicians he interviewed recounted myriad details contrary to what is required by the National Guidelines for Death Investigations. However, according to the prosecutor, each of the officers and technicians denies telling Straub what he claims they said. Straub is unquestionably well-qualified. The police officers' and

technicians' out-of-court statements to Straub as he recounts them are all inadmissible hearsay.

1. Should Straub be permitted to recount his opinion to the jury? Why or why not?

2. If yes, should he be allowed to relate the bases for his opinion to the jury? Why or why not?

Problem 9-39: Psychologists' Hearsay

In the linguistic rage problem, Problem 9-25, the psychologist bases his testimony that linguistic rage rendered Cheng incapable of telling right from wrong on: (1) his interviews of Cheng, Cheng's parents, friends, and employers, all of which statements are inadmissible hearsay; and (2) the opinion of the linguist that Cheng's history and behavior fit the prototypical description of linguistic rage, again a hearsay statement not fitting within any exceptions.

1. Is the psychologist's opinion admissible? Why or why not?

2. If yes, may the bases for his testimony be revealed to the jury?

§ 9.07 EXPERT EVIDENCE REVIEW PROBLEMS

Problem 9-40: Physician, Heal Theyself

Robert Allen is injured in an automobile accident. He brings a civil suit against the other car's driver. At trial, plaintiff calls a physician to the stand, hired solely for purposes of this litigation, to testify that, in his opinion, the accident compressed a previously healthy nerve in plaintiff's neck, a compression likely to cause plaintiff a lifetime of pain. The physician relied on the treating radiologist's report, the emergency room physician's medical records, an interview with the plaintiff, and interviews with the plaintiff's family members in reaching the physician's opinion. *Select the best answer.*

1. The physician's opinion is inadmissible.

2. The physician's opinion is admissible if the proponent establishes that all its bases are of the type reasonably relied upon by other experts in the relevant field, but those bases are presumptively inadmissible.

3. Both the physician's opinion and all its bases are admissible, absent a showing of unfair prejudice to one of the parties.

4. The physician's opinion is admissible, but its bases may never be revealed to a jury on direct examination.

Problem 9-41: Coercive Indoctrination

John Dalvo is charged with murder and conspiracy to murder. John's defense is that "coercive indoctrination," (colloquially known as brainwashing) by John's older, more charismatic co-conspirator, rendered John temporarily insane. John calls a psychologist to the stand who will testify that in his opinion, John was indeed indoctrinated into his crime by his co-conspirator. *Select the best answer.*

1. The physician's opinion's admissibility will turn on whether it is the product of reliable principles or methods reliably applicable to the facts of the case and based upon sufficient facts or data.

2. The *Daubert* test does not apply to "soft" sciences like psychology.

3. The *Daubert* test does apply, but the opinion is admissible if it is generally accepted in the field of psychology.

4. The *Daubert* test applies only if the study of coercive indoctrination is based on novel principles using novel methods.

Problem 9-42: Experts Not

Which of the following statements is NOT true concerning an expert witness?

1. An expert witness may base her opinion on irrelevant information as long as it is made available to the opposing side prior to trial.

2. A person testifying as an expert witness may qualify as an expert even if she does not possess a college degree.

3. An expert witness may base her opinion on double hearsay.

4. An expert witness may not testify in a criminal case for the defendant on an ultimate mental state issue.